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THE

PHOTOGRAPHIC TIMES.

VOLUME VII.

NEW YORK:
SCOVILL MANUFACTURING COMPANY.
1877.

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ILLUSTRATIONS ON WOOD.

	PAGE
Negative Enlargements	79
Head-Rests	122, 123, 124
Surface Markings	220
S. P. C. Photographic Cotton	246

CONTENTS.

PAGE

Aeration of Water, A Note on the. N. K. Cherrill........ 250
Air Bubbles in Albumenized Paper, A Process to Avoid. E. Andres........ 132
Albumen. A. P. Clark........ 31
Albumen Paper, The American........ 36
Alba Plates and Carbon........ 56
Alkaline Developer. Ernest Boivin........ 226
American Optical Co.'s Apparatus, The........ 145
American Photographic Goods in Europe.. 195

Background for Study, A. G. W. Wallace 102
Blue Glass. M. D........ 57
Burglar, The Photographic........ 224
Burnishers and Burnishing........ 232
Business Prospects........ 73

Card-Mounts and Permanency........ 36
Carbon Process, Failures in the. Liesegang 107, 130
Charles Wager Hull, a Letter from........ 266
Children, On Photographing. G. W. Webster........ 84
Collodio-bromide Emulsion........ 12
Coloring Photographic Pictures, On the. Edward Dunmore........ 33
Collodio-Bromide Emulsion Process. Wm. Brooks........ 127
Coloring Negatives, On........ 195
Collodion, Rapid. M. Gougenheim........ 226
Camera in the Garden, The. John Nicol, Ph.D........ 201
Composition, The Application of Certain Rules to. Burnous and Colton........ 56
Combination Pictures, Producing. James Martin........ 199
Correction........75, 99
Correction. Dr. Charles Jewitt........ 193
Correspondence. O. Hakelin........ 269
Cyanotype Copying Process, The........ 175

Danger to be Guarded Against, A........ 224
Deeds of Photography. W. H. M........ 106

PAGE

Developer, A Strong. Ernest Boivin........ 131
Drink for the Studio, A Refreshing. A. J. Jarman........ 200
Dry Collodion. Ernest Boivin........38, 244
Dry or Wet........31, 50
Dry Plates, Stray Thoughts on. P. L. Foster........ 51
Dry Plates........ 86
Dry Process Simplified. Ernest Boivin.. 228

Electric Lamp, A New........ 39
Emulsion, On the Use of. L. C........ 12
Emulsion Work, A Dry-Plate. Edward Smithells........ 25
Emulsion Plates, On the Spots in. L. Warnerke........ 62
Emulsion Manipulations. H. J. Newton... 170
Experiences in the Studios, A Few. Peter Low........ 178

Fatty Inks, Printing with. Despaquis.... 229
Flash of Lightning may do, What a. W. H. Clarke........ 171
Foreign Make Up, Our........16, 40, 64, 109, 180
Form and Expression, Impression of. W. F. Osler........ 151

Gold Salt for Toning. Dr. J. Schnauss... 205
Good Deeds of Photography. A. H. Wall 28
Grand Medal of Honor to Samuel Peck & Co., The........ 4

Head-Rests, and How to Use Them. Poser 122
Heat, Light, and Actinism. Dr. John N. Draper........ 200
History and Handbook of Photography. Tissandier's........ 49
Hot Weather, Working in........ 176
How Hypo is Made........ 251

Improvements in Photography, Recent..... 134
Instantaneous Photography. W. Sahler.. 152

Klary's Method of Lighting........ 203

PAGE
Landscape Photography. Geo. Mansfield 59
Lantern Slides, French.......................... 99
Lichtpau's Process, Modification of the.... 206
Light, Exposure and Development. H. A. H. Daniel..52, 80
Lightning, Photographing by.................. 218
Little Matters. Dr. H. Vogel................ 132
Look for Light. D. E. Smith................ 169

Matters of the Month,....5, 35, 58, 78, 101, 125, 156, 180, 193, 217, 245, 267
Morrison's Wide-Angle Lenses............... 5
Morrison Lenses, Dr. Higgins on............ 267
Mosaics for 1878................................... 274
Mounting Photographs. W. B. Woodbury 159
Movable Light Screens. British Journal, 272

Negative Enlargements. Von Kolkow..... 79
Night, Photography at.......................... 147
Newton's Emulsion, Alkaline Development for. H. J. Newton.......................... 74
New Book, Our...................................... 98
Newton's Emulsion................................ 99
Newton's Sal Soda Developer................ 121
Newton's Emulsion. Dr. Charles Jewett 146

Obituary..88, 209
Oil Photo-Miniature, The....................... 65
Outdoor Photography............................. 201
Oyster-shell Markings. E. Dunmore 198

Painting Upon the Photographic Image, The Art of. Joseph Wake.....222, 252, 277
Paper, To Keep Wet After Silvering......... 88
Parlor Paste.. 136
Peerless Lenses, The.............................. 266
Photographic Times, The........................ 1
Photographic Portraiture. A. H. Wall... 2
Photographing in a Coal Mine................ 9
Photography from a Holiday Maker's Point of View. H. B. Pritchard............. 75
Photo-Heliography, Theory of the Horizontal. Prof. William Harkness........ 83
Photography and Art. A. Tissandier..... 102
Photographs on the Eye......................... 106
Photographic News.............................. 220

PAGE
Photo-Lithographic Paper. J. Husnick... 256
Photography, can it be Classed among the Fine Arts? Chicago Herald.......... 276
Picture Hanging. E. Dunmore............... 63
Pin-Holes. D. W. Whetton.................... 11
Platinotype, The. W. E. Batho.............. 153
Prefecture de Police, Photography at the... 172
Pre-Glacial Photography......................... 242
Prizes Offered by the Vienna Photographic Society.. 158
Printing Block, To Transform a Simple Photograph into a................................ 205
Pyle's Volumetric Silver Test................. 227

Recovery of Gold. Dr. Schleussur........ 133
Reflectors *vs.* Screened Windows. British Journal.. 270
Restoration of the Printing Bath. A. Stock 172
Retrospective and Prospective................ 265

Scientific Jottings. J. G. Austen............ 229
Sensitive Paper, On the Preparation of Durable. Edward Smithells.............. 25
Simultaneous Exposure and Development Ernest Boivin.............................. 228
Society Work... 9
Speaks for Himself. M. W. Nuller, M.D.. 182
Spot Plague, The. Thomas M. Laws...... 61
Spots and Blemishes, Removing............. 270
Surface Markings.................................. 219
Swazey's Scenic Backgrounds................. 100
Swazey's Scenic Backgrounds and Accessories.. 241

Talbot, William Henry Fox.................... 246
Talbotype, The Discoverer of................. 248
Things Well Said.................................. 108
Times Residues..................................... 14
Topics of the Times,......135, 159, 183, 207, 231, 255, 280
Transparencies..................................... 245
Tricks and Truth; or, Doctor and Artist. Sunbeam... 7

Welcome 1877....................................... 1
Working in the Field, A New and Simple Method of. Peter Mawdsley......... 30

THE

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SCOVILL MANUFACTURING CO., PUBLISHERS, 419 & 421 BROOME ST., N. Y.

THE PHOTOGRAPHIC TIMES.

A Monthly Journal, devoted to Practical and Commercial Photography.

It contains twenty-four pages of useful matter.

Subscription price $1 per annum, *postage paid*, including one copy *Photographic Mosaics* for 1877 as a premium.

We *give* it to all readers of the *Philadelphia Photographer*, with which journal the *Photographic Times* is bound each month, besides which, it has a long list of independent subscribers, thus making its circulation much larger than that of any photographic journal in the country.

The advantages to advertisers are therefore apparent.

We will accept a limited number of advertisements at the following rates:

One page, one time, . . .	$20 00
Half page, one time, . .	12 00
Quarter page, one time, .	7 00

Special terms for advertisements for a longer period.

"Peerless" Portrait Lenses were used by the Centennial Photographic Co.

WELCOME 1877!

HERE we are once more fairly launched upon a new year, and although we are a little late in offering the compliments of the season, we trust our greeting is none the less sincere, when we wish a Happy New Year to all our readers, and many returns of more of the same sort. The Centennial year has passed, with its many varied experiences for good or for ill. We have heard some complaints that the Centennial had hurt business in some sections. This may be true; but we hope the sufferers will forgive the patriotic people who got it up, and we think they will promise never to get up another one.

The fact is, a depression in business has hung over our country, and we may say the world, for the past three years; for the same complaints come from nearly every country or section where the ramifications of trade penetrate, and every one who feels the effects of it attributes it to some cause he thinks he comprehends. Photographers and some others have recently held the Centennial responsible; others, politically disposed, see the cause of all our evils in the desperate character of our national administration; thus it is, some find one cause and some another. But we are disposed to be hopeful at the beginning of

USENER'S PORTRAIT LENSES.

this new year, that, with the Centennial past, and the prospect of an early settlement of the political agitation in reference to the Presidency, we shall have a revival in business. To photographers everywhere, who have felt the pressure of the times, we would say, Cheer up; put your best foot forward, and make an effort for a revival of trade for the year 1877!

With our country's immense industries, and the flow of gold from Europe to America, instead of the other way, as has usually been the case, we believe that money will find its way in plentiful quantities to the rural and manufacturing districts; the business of the country will be more equally distributed, and a general improvement on all sides will be the result. Now, as far as photographers are concerned, it rests with themselves, in a great measure, whether they share in this better state of things. In order to command trade, you must have something that people want, and you must offer it to them in an attractive shape. If your galleries are untidy, your specimens faded and out of style, with no evidence that you are trying to do as well as is done in other places, you need not expect to have any part in a revival of business. But just be in your best trim; let it be seen that you do good work, and can give your customers their money's worth, and if there be any business doing, you will get your share of it.

The *times* are not altogether out of joint; at least we propose to supply you the *Photographic Times* as usual, in connection with the *Philadelphia Photographer*, and shall try, as we have done, to make it useful to our readers as well as to ourselves. We shall endeavor to make it instructive to photographers, and a helper in their daily practice, as well as a medium through which they may keep posted on the prices and quality of the goods they are constantly using. It is the determination of the Scovill Manufacturing Company to supply the best goods at the lowest rates. An important matter in business is to keep down expenses; and, in view of this, we say to photographers, read the *Times*, and take advantage of the best market; buy where you are sure your money will give you the best return.

Lewis & Holt's Collodion in Scovill's Pouring Bottles.

PHOTOGRAPHIC PORTRAITURE.

CHAPTER IV.

(Continued from vol. vi, page 269.)

SOME LESSONS FROM LESLIE.

THE late Royal Academician, C. R. Leslie, was wont to exclaim about the usual protests against the preponderance of portraiture at the annual exhibitions of the Royal Academy, by saying that it was not the kind or quantity but the quality of the works exhibited which elevated or degraded the character of the whole collection. He also pointed out, as he does in his *Handbook*, that artists who could not invest a portrait with interest and artistic excellence, would not produce works of any higher character if they selected imaginary subjects from poetry, history, or landscape.

Portraiture, indeed, affords full scope for the exercise of great and intellectual artistic taste and power, and those who hold a contrary opinion have certainly not given much thought to the subject, or seen appreciatively the great works to which, in the preceding chapter, I have called attention. He (Leslie) says of it, "Such art as his requires, indeed, the highest powers of mind, hand, and eye; and I do not believe that when Raphael or Titian occasionally quitted history for portraiture it occurred to them that they were descending to a lower sphere, and I am sure they did not find it easier to satisfy themselves." Art was not classified of old as it now is, and the great masters of the past elevated their subjects and were not elevated by them, as the young artist who hears portraiture sneered at as an inferior branch of art is only too apt to suppose. All the old masters whose works have been the pride and delight of successive generations, and for the possession of which nations have contended, were portrait painters.

"Even Michael Angelo," says Leslie, "was great in portraits. There may not remain any *painted* portraits of known persons by his hand, but there are sculptured portraits by him; and it is impossible to look even at the engravings of the Prophets

SCOVILL'S 8x10 BORDER NEGATIVES, 50 Cents.

and Sibyls without seeing that they are from a hand practiced in portraits—a hand, too, that had acquired its power by the practice of liberal exactness." Even Fuseli, who held the detail of character to be inconsistent with the grandeur and poetry of epic art, when writing of Michael Angelo's works, confesses that each Prophet has distinctive individuality and well-marked, portrait-like characteristics, and speaks of the Sibyls as similarly expressive of individual character. Commenting upon these great works in the Vatican, our teacher of this chapter says: "There cannot be a doubt that Michael Angelo, had he devoted himself to portraits only, would have been a superlative portrait painter, for in his works we find everything in perfection that portraiture requires,—dignity, the expression of character, the highest perception of beauty in man, woman, and child; and not only in the unfinished marble that adorns the Royal Academy library, but in the smaller compartments of the Sistine ceiling at Rome, wherein the most natural and familiar domestic incidents are treated in the most graceful manner." And Leslie, still upholding the dignity and importance of portraiture in a way which should impress all who follow the art, whether photographically or otherwise, adds: "It is right that this should be remembered, because painters, as they fancy themselves, of high art, who really have not the talents that portraits require, must not be allowed to class themselves with Michael Angelo as long as they cannot do what he in perfection could do." So teaches Leslie in a lesson which cannot be too forcibly impressed upon the minds of all those who are students of portraiture as a branch of art.

Leslie, as I have shown in a former chapter, held the works of Sir Joshua Reynolds in the highest estimation, and speaks glowingly of the portraits of Vandyke, thus indorsing the lessons from preceding great masters already spoken of in these papers; but he does not place Vandyke in the front rank, and speaks complainingly of his posing of single figures, the attitudes of which, he says, "are often formal and unmeaning." It is, in his opinion, "the fine treatment of his masses," that, with certain qualities of colors, to which I need not allude, have placed him high in portraiture. He held Velasquez to have displayed much higher powers than Vandyke possessed, and therefore directs the student to his works as lessons. He notes, as the noblest group of portraits in the world, the finest work of its class Titian ever produced, the Luigi Cornara family group. In this picture the fine old man, whose life had by temperate living, as was supposed, been protracted to a hundred years, is seen kneeling before an altar in the open air surrounded by his grandchildren and son-in-law, three of the younger children being represented playing with a little dog on the steps. In this famous work Leslie points out, as specially worthy of the student's attention, the characteristic arrangement of the figures, the noble simplicity of the lines, and the truth and power of the color, the last being a subject with which, of course, the photographer has little to do except in so far as the colors represents tones, in which respect all great paintings should be esteemed highly deserving of his serious and persevering consideration.

A dear friend of mine, now alas! no more, the late O. G. Rejlander, used to study the works of great painters with the greatest care. He grouped and lighted, with a view to realizing their exact effects, scores of carefully selected, draped, and patiently trained models, and in many cases produced photographs from the life closely resembling the great originals. He held portraiture, and photographic portraiture, in the highest estimation, and had been convinced by such studies that he was right in doing so. I have also heard him speak very highly of the value of Leslie's teachings and praise in his works those excellences with which photography can most readily cope. For Leslie was a painter of the Wilkie school as opposed to that which poor Haydon so fervently upheld, and utterly opposed to the extremely anti-photographic theories of wild Fuseli, whom nature only "put out,"—a teacher whose followers are, at least in England, now extremely few and far between. He sought to realize, not to "improve," nature, and many of his figures are as carefully copied

MORRISON'S NEW RAPID COPYING LENSES.

from the models he selected as they could have been with the lens and camera as veritable portraits. In the same way Leslie's rustic figures are never the masquerading supernumeraries of the stage, but carefully realistic studies from life, selected life, not haphazard models, and are, as somebody says, "village bred and village fed," with complexions produced by exposure to ever changeful sun and air, and not the rouge pot and hare's foot. Real old farmers and farm laborers were his models for such pictures as (say) *Sir Roger de Coverley going to Church;* and he painted from them so that each was a portrait, not formal in expressive "front elevations" of men and women, but breathing figures, animated by thought and feeling.

A. H. WALL.

* * *

Morrison's Wide-Angle Lenses were used by the Centennial Photographic Company.

The Grand Medal of Honor to Samuel Peck & Co.

THE exhibit of Samuel Peck & Co., at the Centennial Exhibition, has received no more graceful testimonial from any source than the following from the Philadelphia correspondent of the *Boston Journal of Commerce*, published in that paper December 9th, 1876 :

SAMUEL PECK & CO., GRAPHO-STEREOSCOPES AND PHOTOGRAPHIC GOODS.

There can be no doubt but that photographs, and especially stereoscopic views, approach in all their details nearer to the perfection of nature than any other kind of art; and although inevitably distorted in the representation of objects by their dimensions on one plane, they can nevertheless be made to appear by proper appliances in nearly all the reality of nature. The inventive genius of many people has been exercised toward this end, but the most convenient and least fatiguing means arrived at has been undoubtedly the Grapho-Stereoscope, an improved form of which is shown by the Scovill Manufacturing Company, as agents for Samuel Peck & Co., of New Haven. These are most elegant instruments, and bring out, by means of accurately made and ground lenses, every effect and detail of the picture with startling vividness. The mountings of the lenses are very fine. The instrument shown is most elegantly made of solid rosewood, superbly finished in French polish, and richly trimmed in burnished nickel. The lens frame slides on polished nickel rods, which are capped with ivory. The picture rest is of exquisite open-work design, and is supplied with ground-glass for showing transparent pictures. Other styles less expensive are also made, of which the lenses are quite as good, the only difference being that the mountings are plainer. The exhibit also includes a number of handsome carte de visite frames, finely finished card, cabinet, octagon, and round-cornered and square, with oval opening, picture frames, and many other styles of remarkably fine workmanship and tasteful design. There is a large assortment of Union picture nails and knobs, and some elegant designs in drawer and curtain knobs. The Union cases are very neatly ornate, and at the same time artistic. They are of several very *recherche* models, singularly graceful and becoming. The same firm also shows some Photographic Printing-frames of cherry, with brass springs and panelled backs; also, Platt's Printing-frames, nearly all of metal, with an adjustable support, so that they can be placed at any angle; and also Jacoby's Improved Combination Printing-frame. The construction of some of these different makes should suit the most fastidious taste, and they are all adapted to do good work. There is also a number of strongly made negative boxes of convenient sizes. These goods exhibit so much attention to the selection of good material and to a high order of workmanship, that they were unanimously voted a most commendatory diploma by the jury, accompanied by the grand medal of honor. The address is the Scovill Manufacturing Company, Nos. 419 and 421 Broome Street, New York City.

* * *

"Peerless" Portrait Lenses were used by the Centennial Photographic Co.

PARYS' NEGATIVE GUNCOTTON.

Morrison Wide-Angle Lenses.

WE publish below what has before appeared in our columns respecting these most excellent instruments. For testimonials of later date see "Matters of the Month" in present issue.

SCOVILL MANUFACTURING CO.

GENTLEMEN: The 14 x 17 Morrison Lens, after a thorough test since February 24th, has proved satisfactory in every particular.

SILVER & WATERMAN,
89 Fulton Street, N. Y.

SCOVILL MANUFACTURING CO.

GENTLEMEN: I find the 14 x 17 Morrison Lens superior to any *View* lens that I have ever used, after an experience of fifteen years in photography.

G. A. POWELSON,
View Operator for Silver & Waterman,
89 Fulton Street, N. Y.

MORRISON *vs.* DALLMEYER.

MR. MORRISON: The wide-angle lens you sent me is right up to the mark, so far as definition, flatness of field, and depth of focus is concerned, and I find that it works *half as quick again* as the Wide-angle Dallmeyer Lens the same size.

Yours respectfully,
J. WRIGHT.

89 FULTON STREET,
NEW YORK, September 12th, 1876.

MATTERS OF THE MONTH.

NEW YORK, November 1st, 1876.

MR. R. MORRISON: Your rapid copying and group lens E for 10 x 12 plate is A No. 1 in quality. I have been working it some time now, and can say that it cannot be surpassed. I have been prejudiced in favor of the Dallmeyer instruments, but I must say that I have never produced better work with those than I have executed with yours; in fact I do not believe there is, for the size of it, a lens in the market which will cover so large a field with equal depth of focus and clearness of detail.

Respectfully yours,
A. J. RUSSELL,
Photographer, Frank Leslie's,
537 Pearl Street, New York.

PLYMOUTH, LUZERNE COUNTY, PA.
November 3d, 1876.

SCOVILL MANUFACTURING CO.: The Victoria box you sent me works well. I am well pleased with it.

Yours truly,
F. J. WALSH.

DR. AUGUSTUS LE PLONGEON, archæologist, author of *The Manual de Fotografia* and various scientific works on surgery, medicine, and chemistry, is now in the interior of Mexico, where he has been for a year or more exploring for Indian antiquities, in company with his wife, who is also a scientist. He has sent us an album of photographs representing some of the specimens of his archæological researches in this ancient country. These pictures, apart from their historical interest and importance, are remarkable as photographs, indicating Dr. le Plongeon's great skill in manipulation, which, under the most adverse circumstances of climate and conditions, has produced uniformly good results.

The Doctor uses Morrison's Wide-angle Lenses.

LENSES AT THE CENTENNIAL.

MR. R. MORRISON,
Care Scovill Manufacturing Co.

DEAR SIR: In answer to your query as to what lenses were used by the Centennial Photographic Company at the "great show," I would say that for viewing exteriors, interiors, exhibits, statuary, etc., the Morrison Wide-angled Lenses were used. This part of the work came under the more immediate care of Mr. Gihon. *Portraiture* was *my* branch, and we used and do yet use the "Peerless" lenses for that work, and I like them exceedingly, even better than the Dallmeyers we had.

F. D. HOPKINS.

January 3d, 1877.

THE "PEERLESS" LENS is still ahead! Our friend, Mr. D. E. Smith, of Oneida Community, N. Y., writes us as follows:

". . . I took mine to a leading photographer of Oneida a few days since, and tried it with his, which is a popular lens. The Peerless cut quite as sharp, and took but *one-half* the exposure; a great consideration in these dark days!"

SPENCER'S CENTENNIAL HEAD-REST—Price, $13.50.

The Multum in Parvo Pocket Cook-Stove is the cleverest invention in this line ever introduced. Photographers find it very convenient at all times of the year, but especially during cold weather when solutions require warming or boiling. They burn alcohol only. Price, 90 cents each and upwards, depending upon size and style of attachments. See full description in *Times* for October last.

For sale by all dealers in photographic stock.

A New Drying Oil.—The *Elacoeocca Vernicia*, or *Tong-Yeou*, a tree growing in China and Cochin-China, produces abundantly a fruit consisting of a capsule filled with grains rich in oil. This oil is easily extracted by pressure, has a density of 0.9362, and possesses a variety of curious properties. According to Cloez, who has lately submitted it to thorough investigation, it dries more rapidly than any other known oil, a coating of it applied to glass or clean metallic surfaces becoming dry in a very few hours. An attempt will probably be made to acclimatize the plant in Algeria, with a view toward rendering it useful in the arts and introducing it into commerce. One of the most remarkable facts connected with the oil is its power of solidifying under the action of light and out of contact with the air. Heating in the air it also becomes solid, this change being, however, a chemical one due to oxidation.

New York, December 1st, 1876.

Scovill Manufacturing Co.

Gents: After thorough trial, I feel justified in pronouncing the New Morrison's Rapid Copying Lens, which you sent me, an excellent lens.

Yours respectfully,

James W. Carmichael,
Photographer for the New York Lithographic,
Engraving, and Printing Co.

Office of the Photo-Plate Printing Co.,
Edward Bierstadt, Proprietor,
58 and 60 Reade Street,
New York, Nov. 29th, 1876.

R. Morrison, Esq.

Dear Sir: I have carefully tested the 4 x 4 New Rapid Copying Lens of your make, and am happy to say that it comes fully up to any I have ever tried in every respect. It will work as quickly, cut *fully* as sharp, and focus as easily as any other, and I do not know of any better lens being made than this.

Yours truly,

E. Bierstadt.

89 Fulton Street,
New York, Nov. 29th, 1876.

Mr. Morrison.

Dear Sir: The 10-inch New Rapid Copying Lens which you sent me to try, I find to be fully equal in every respect to any lens I have in my possession (which includes the Dallmeyer Wide-angle and Dallmeyer Rapid Rectilinear) with this difference,—your lens covers a larger field for the same size of lens.

As soon as you can let me have one please do so.

Yours respectfully,

J. Wright.

Mr. Wright is well known as one of the highest authorities on photography in this country. For several years he was photographer-in-chief for Frank Leslie's publishing house. He is the inventor of a superior process for photographing on wood for engraving, and is doing an extensive business in this particular line. He is an Englishman, and naturally supposed, until he had tried Morrison's, that nothing but a Dallmeyer would do his work.—Ed. of *Times.*

The Southern Photographic Stock Depot, Atlanta, Ga., W. T. Waters, agent, has issued a very concise and comprehensive catalogue of photographic requisites, of which the purchaser may always find at Mr. Waters's the best, and at very reasonable prices.

Helena Art Gallery.—"Lifelike and true to nature," is the exclamation of all who visit the art gallery of Mrs. Eckert, and examine the specimen pictures that decorate her studio. The remarkable success that has attended her efforts in giving satisfaction to her patrons has established a reputation as wide as the Territory. That this reputation is well founded is seen in the award which was accorded to Mrs. Eckert's display at the Territorial Fair, *for the very*

A. O. CO.'S CENTENNIAL CAMERA STAND.

best pictures made in the Territory.—Exchange.

CENTENNIAL PHOTOGRAPHS.—A full assortment of Centennial views, exteriors and interiors of all the buildings, exhibits of fine arts, statuary, etc., for sale by Scovill Manufacturing Company, 419 and 421 Broome Street, New York.

FRANK LESLIE'S PUBLISHING HOUSE,
537 PEARL STREET,
NEW YORK, Dec. 21st, 1876.

MR. MORRISON.

DEAR SIR: I am very much pleased with your New Copying Lens. It is all that could be desired; it works with rapidity, and as sharp as any lens I have ever used, possessing as well great depth of focus and breadth of field.

I cheerfully recommend it to the fraternity. Respectfully yours,

W. B. AUSTIN,
Photographer, with Frank Leslie.

FOR SALE.—A good photographic car, now doing a good business. Cost $450; will sell for $125. Proprietor going to California. Address,

H. W. WATSON,
Catasauqua, Lehigh Co., Pa.

Phenix Varnish. Price per 8-ounce bottle, 50 cents.

Tricks and Truths; or, Doctor and Artist.*

SCENE.—Operating Room at Hastings, White & Fisher's Gallery.

Artist. Now, Doctor, how would you like to appear in this photograph?

Doctor. Well, make it as as you think a doctor should look in a picture.

Artist. But there are a variety of expressions: shall it be the one you would assume on being called up at midnight, or that at the recovery of your patient?

Doctor. I should prefer that smile of satisfaction one would be likely to exhibit on receiving the amount of a bill he had considered lost.

Artist. You have some experience in that line, doubtless. Now, I like doctors. If I was not an artist, I would rather be a doctor than a governor!

Doctor. I think the profession of doctor *is* the most useful of the two.

Artist. Of the three, you mean. Now, see here, a doctor is more useful than a governor, and an artist is more useful than a doctor!

Doctor. I should like to know how you make that out. Don't you think that will be difficult to prove?

Artist. Difficult? Oh, no; governors would die without doctors, and doctors only make men fit for the artist; and then you know the works of doctors die in the bodies of men, and by artists' works the bodies of men live forever. Now sit down, please.

Doctor. Quite an argument, indeed. You have been very successful in business here, I am told.

Artist. Quite so; our business has assumed greater proportions than we anticipated in the outset. We started without a specimen, and it was uphill work for awhile. Ah, Doctor, *specimens* are in demand even in the medical profession.

Doctor. Good ones, you mean, of course, but is not the reputation of your photographs due somewhat to the fact that they so often flatter the originals?

Artist. Very likely; of course we take out the wrinkles, if there are any, as the camera makes them appear harder than in the original. Then we straighten the nose, if it needs it, and smooth away the harsh lines. Once in awhile we run across a party who orders them to be left in, but this is seldom the case.

Doctor. Are your customers, as a general thing, exacting and hard to please?

Artist. Some of them are. Look this way, please. As a matter of course, they all want to be made good-looking. For instance, about a year ago a lady desired a photograph of herself to look as near like Mrs. Scott Siddons as possible. She was very fleshy, and just the opposite of what she wanted the camera to make her in the picture. Here was a case where we must be untrue to nature, or lose the trade. We made the picture. It was unlike Siddons in everything but position. We then sliced the arms down to proper size, took the superfluous flesh off the face, tapered down the waist, and rounded off the form to order, and the lady was perfectly charmed with the result. Now turn the head so.

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* Hastings, White & Fisher's Sunbeam.

Doctor. But this must have been an isolated case.

Artist. Not at all. We can accomplish a great deal by means of photography, and the resources of our art are still unfathomed. Not long since a young man died suddenly, who had never had a sitting for a picture of any kind. His family were very anxious to get some kind of a portrait. We went to the house and succeeded in getting a good negative of the features and general expression of the dead man (the friends said the corpse looked very natural); of course the eyes were wanting. We eliminated everything deathly in the negative, put in the eyes and finished it in crayon, and when the family looked upon the finished portrait they pronounced it perfect in every particular. Are you tired, Doctor?

Doctor. Oh, no. I was going to ask if men are as hard to please as women?

Artist. Yes, and sometimes more so. Some of the men who engage sittings are quite fussy about the shape, position, and general appearance, and often desire a second or third sitting, because some piece of wardrobe was not properly adjusted to their taste.

Doctor. How do you manage to get along with such people?

Artist. That is quite a trade in itself. We agree to give them sittings until they are suited, but some of them never are, but as we require a deposit when the negative is made, it has a tendency to shut off those who sit *just to see how they look.* There, now, all ready; wink as much as you please. [*Plate exposed.*]

Doctor. I was thinking during the exposure why it happens that while the photograph is true to nature in regard to form, that the white seems too light and the dark too dark. How do you explain this?

Artist. While I am developing this plate I will place in your hands Dr. Vogel's opinion on that subject, as he is the highest known authority.

[*Artist disappears and Doctor reads.*]

"Critically speaking, the photograph does not represent the exact order of light and shade one finds in nature. Light objects require a short exposure, dark ones longer, and as both must be taken together, it is not always easy for the operator to get a good picture. He must select a tasteful position, and secure a good expression of the face, but this expression is ever varying from a thousand circumstances, so that the photographer is not necessarily to blame."

[*Artist returns.*]

Doctor. I should judge from this that harmony should exist between complexion and costume in order to secure the most favorable results.

Artist. That's just it, Doctor. True, we can control the light much better than we did a few years ago; but where the face is *very* white the dress should not be *very* dark. We have such cases very often, and of course as the one or the other must be sacrificed to a certain extent, it is usually the dress, as the face is considered *the* feature in a picture. If people would study this in regard to sittings, they would secure more pleasing pictures.

Doctor. And the business of furnishing people with copies of their loveliness you say is increasing.

Artist. Increasing every year. There is absolutely no limit to progress in the art, so that a year hence everybody may want a new picture.

Doctor. You say the proofs will be ready to-morrow. Well, I will send a boy in for them.

Artist. Excuse me, Doctor, but a proof is an unfinished picture and fades quickly, and although many of our patrons have taken the proofs to show their friends, yet we have always felt that it was not just to them or to ourselves, for in many instances we have known the proofs to fade before the party most interested had seen them; besides, it does not correctly represent the picture as it will appear when finished, and must consequently misrepresent our work. To avoid this, our customers come now to the gallery to inspect their proofs.

Doctor. All right; no one can blame a workman for guarding his work until it is finished. Good day. [*Exit Doctor.*]

"Peerless" Portrait Lenses were used by the Centennial Photographic Co.

S. PECK & CO.'S ACME CAMERA STAND.

PHOTOGRAPHY IN A COAL-MINE.

We have to record a novel and interesting application of this most useful art. A few days ago, we believe for the first time, an experiment was successfully made for the purpose of obtaining an accurate picture of some underground workings in a coal-mine, the process being effected by means of the oxyhydrogen light, generally known as the limelight, in combination with magnesium riband in combustion. The scene of the experiment was the Bradford Colliery, Bently, near Walsall, where, a few days ago, Mr. Frederick Brown, of Walsall, accompanied by Mr. Chidley, representing the firm of Messrs. Duignan & Co., solicitors of that town, attended at the mine for the purpose of obtaining representations of certain portions of the underground workings, to illustrate a question of practical mining which is incidental to a litigation respecting that colliery, and having made some preliminary experiments with magnesium light, came to the conclusion that photography would be perfectly possible under conditions which exclude sunlight altogether. Upon the following day, Mr. Brown, attended by one of the proprietors of the mine and the deputies, successfully obtained pictures of the portions of the mine indicated by Mr. Chidley. The photographs, as finished, are not only in themselves valuable for the purposes of evidence for which they were required, but, when viewed in the stereoscope, form perfectly accurate delineations of the places from which they were taken, and, indeed, without an explanation that they had been taken altogether by artificial light, the ordinary observer would suppose them to have been produced by the action of the sun in the ordinary way. The process occupied for each picture is from twenty-five minutes to half an hour, while the sensitive plate was under the action of the light. One of the principal technical obstacles which Mr. Brown had to encounter in the chemical portion of the process, was that the ordinary wet plate, although so much more rapid in its action, would not retain its moisture for the lengthened time of exposure rendered necessary under the altered conditions of light and the well-known increased temperature in mines; but this difficulty was, after repeated experiment, admirably overcome by a chemical formula which Mr. Brown was fortunately able to devise to meet the special emergency. The difficulties of focussing arising from cramped position in the mine were, of course, merely mechanical, but consumed much time to overcome. The result appears important in many ways, as suggesting in future the possibility as well as the propriety of photographing the interior of mines after accidents, and in the course of litigations and the like, for the edification of those who have not had the opportunity of visiting the spots, and yet might have to decide questions respecting them. The possibility also of introducing a powerful and steady light completely under control, which may be fed from the surface by means of flexible tubing, and which would enable a light rivalling that of day to be sent into dangerous places from a convenient and safe distance, appears to us to open a pathway to very important practical application.—*From the Birmingham Post (Eng.).*

Phenix Collodion. Price per 8-ounce dreg bottle, 60 cents.

SOCIETY WORK.

As the maintenance of societies seems so necessary to the promotion of the best interests of photography, and any reasonable suggestions for conducting them more successfully should be readily considered, we commend to those interested the following extract from a paper read by Mr. E. R. Yerbury before the Edinburgh Photographic Society.

"The aims and objects of photographic societies generally no doubt vary according to circumstances, but there are a few things which they in common all seek to attain, and to these, or the most important of them, I intend at present to confine myself. Those are, first, the advance of photography, both as an art and a science, or artistically and technically; secondly, the educating and elevating of the public taste to appreciate the true and beautiful in art, whether exemplified in photography or painting; and

A. O. CO'S. POCKET CAMERA IS THE BEST.

third, the bringing of men together who have much in common, for that social intercourse which tends so much to remove the trade jealousies, and round off the angularities, so generally incident to isolated members of a community.

"Keeping these three objects in view, it will be evident that the first aim of those to whom the management of such societies is more immediately committed, ought to be the getting of as many names as possible on the roll of membership, and the securing of as large an attendance as possible at the ordinary and stated meetings. In our own society the former has been obtained by a low rate of subscription, and the latter, by securing that as far as possible a part at least of the proceedings shall be sufficiently popular to interest others than those immediately connected with photography.

"That the Edinburgh Photographic Society has been, to a large extent successful, there can be little doubt, and therefore I do not think that wisdom would be shown by any considerable departure from the present system of management. Our small rate of subscription requires a large number of members to bring the funds up to the required figure, and our popular meetings have done much to make the enlisting of non-photographers an easy matter, while the occasional distribution of prints at ordinary meetings secures generally a large attendance.

"While, however, averse to disturb the present arrangements, on the ground of their perfect suitableness to our requirements, I think that something additional might be grafted on to them that would tend still further to increase its prosperity and enhance its value, especially to those who have but a limited interest in the papers that are read and discussed at the ordinary meetings.

"I take it for granted that practical photographers are too much alive to their own interests to need any greater inducements than the ordinary papers, and consequent discussions, to insure their attendance at the meetings; but in most communities the photographic element is too limited for the healthy carrying on of a society, and therefore it is that the sphere must be considerably extended; and as this extension can only be made by special attractions, the question arises as to what form that attraction ought to take. Probably the best way to arrive at an answer to the question will be to ascertain from the office-bearers if there be a weak point anywhere—a joint in the armor—and then, having discovered it, see how it can be strengthened or repaired. This, in a small way, I have attempted to do, and find that there is a weakness, a very small crack indeed, but still a crack, that is worthy of attention—namely, a difficulty in promptly getting in the annual payment of the five shillings necessary to constitute membership. This difficulty, arising, no doubt, to a large extent from the very smallness of the sum, might, I think, be readily overcome, and several other benefits conferred on the members generally, by the outlay of a small sum of money.

"What I would suggest is this, that there should be an annual distribution of a print, of not less than ten by twelve inches in size, from a high-class negative selected for the purpose, and presented to every member whose subscription had been paid before a certain date, say about Christmas. I have no doubt that the use of a suitable negative might be got for nothing, or rather for the fame which such a proceeding would bring, and the prints, either in autotype or Woodburytype, would cost about £12. This may, by some, be considered a large sum out of our small income, but, after much consideration, I think the scheme would be well worth a trial. If it should be considered so, I think there could not be a more opportune time for it to be put in force, as our funds are in a condition sufficiently prosperous, and the negative might be selected from the pictures in the forthcoming exhibition.

"It is with societies very much as it is with men; in our young days we see the world before us, and start with a resolution to do great things, but with riper years come more limited desires, and, too often, we are content, or are perforce obliged to be, with sufficient for the day.

"Some of those present will remember that the founders of the Edinburgh Photographic

A. O. CO.'S MODEL STEREO CAMERA, 5-8—Smallest made.

Society placed before themselves a most ambitious programme, in which were included a large glass house stocked with model apparatus for the use of the members, and a spacious hall in which the meetings of the future should be held. I suppose, however, we have now arrived at the years of discretion, and have no hope, and hardly an ambition, to do more than keep out of debt, and do the most we can in each year with the year's income.

"I do not, however, wish to be understood as advocating the spending year by year the entire funds of the Society. I have too keen a recollection of the difficulties through which we have more than once passed, and would strongly advise that a sum of at least £50 should be kept to our credit, available in any case of emergency that may arise."

Scovill's Convex Glass—the best in market.

PINHOLES.*

Sir: Having from time to time seen notices in the *Photographic News* of the various methods of treating a negative bath for pinholes, and having often been greatly annoyed with the same, I believe I am able to point out some of the reasons why many fail with the same kind of treatment with which others succeed. As a working photographer, with only very moderate pretensions to chemical knowledge, I cannot at present expect, as many brother photographers do, to be in possession of a panacea for the cure of pinholes. When a remedy is mentioned in the papers, it is tried by those who are in trouble with the (to some people) everlasting pinholes; and if the condition of their bath is such that it proves successful, and at the same time is more easily and quickly applied than former, and, perhaps, successful remedies, it takes the preference of others, though if the same were tried with other conditions of bath, it would fail to cure. I cannot see how one remedy can be a cure for all cases of pinholes when there are so many and such opposite causes. Take, for example, a bath that is somewhat weak of silver, and overcharged with iodide salts through overwork, which, together with a rise in temperature, suddenly gives rise to an abundant crop of pinholes. The same treatment will not answer for that as would be needed for a newly-made bath that gave pinholes, because of its containing sulphate of silver, as mentioned long ago by Dr. Vogel. Each of the cases certainly requires a different treatment to bring the bath into good working order. It may be that the two causes are in operation in the same bath and at the same time; in that case a dose of nitrate of baryta would prove a remedy, for a short time, establishing a deposit of sulphate of baryta, and take with it a small portion of iodide salts. This is not a perfect cure. It will enable a few more plates to be taken, it is true; but one of the primary causes still exists. When pinholes make their appearance in the negative, the operator should not jump to the conclusion that because Mr. So-and-So has spoken highly of nitrate of baryta, and has himself proved the same to be good, that it is a panacea, but should consider what is the probable cause, and apply a remedy accordingly. Many excellent remedies for this have appeared at different times in the *Photographic News*, and, I believe, in the *Year-Books*.

The bath is not the only place to look for a remedy for pinholes. It has occurred to me that a change of collodion has produced them; but on going back to the old one all has been right again with the same bath, the cause of which I cannot account for, but certainly it was not because the collodion was unsettled or dirty.

A very prolific cause of pinholes occurred to me some years ago when working from home in a small portable dark-room. In my haste I got a few drops of developer in the bath, and the plate became completely covered.

Yours respectfully,
D. W. Whetton.

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* Photographic News.

"Peerless" Portrait Lenses were used by the Centennial Photographic Co.

BEST ALCOHOL STOVE—"THE MULTUM IN PARVO."

COLLODIO-BROMIDE EMULSION.

FROM the report of the October meeting of the Edinburgh Photographic Society, in the *British Journal of Photography*, we make the following extract, in which the workers in emulsions may find something of interest:

Messrs. Turnbull and Mathieson made a communication on their "Experience in Working Emulsion Plates." They said that for a long time they had successfully wrought the favorite beer-and-albumen process, but some time last year began to wish for something more sensitive. After the communication to the Society by the Rev. H. J. Palmer, they went very heartily into gelatin, so strongly recommended and successfully worked by Mr. Palmer; but ultimately they abandoned it in consequence of the difficulty of getting anything like suitable density, or preventing the frilling and cracking up of the film. These objections were equally strong with respect to emulsions made by themselves or from the pellicle supplied by Mr. Kennett. Their attention was then directed to collodio-bromide emulsion, which, as they were at present using it, was all that could be desired. After numerous experiments they had discarded all modern innovations, or so-called "improvements," and were quite satisfied that for all ordinary work the original formula, or something very near to it, was the best. The formula they now used was published in the *British Journal of Photography* a number of years ago, and consisted of

Cadmium Bromide,	**6 grains.**
Ammonium Bromide,	**3 "**
Silver (to each ounce),	**11 "**

The emulsion thus made kept for two or three weeks at least, was rapid enough for any one who sought good results more than many pictures, and under a suitable developer acquired density readily; in fact, that the development was almost as rapid as with wet collodion. For some time they had used tannin as a preservative; but certain markings and blemishes had been attributed to it, and now they used ordinary draught bitter beer, and found it quite satisfactory. They further stated that, in their opinion, the sensitiveness of gelatin emulsions had been much overrated, and handed round three negatives—a gelatin, collodion emulsion, and a washed emulsion negative—that had each got the same length of exposure, intentionally short. The gelatin was undoubtedly the best, but very little better than the ordinary emulsion, while the washed emulsion was very much underexposed. They then proceeded to develop a plate, using a sixty-grain solution of carbonate of ammonia to which at first only a few drops of a sixty-grain alcoholic solution of pyrogallic acid was added—bromide, in the case of a beer preservative, being unnecessary—and the image almost immediately appeared. When the detail was pretty fully out, but still quite thin, a few more drops of the pyro solution were added, and under that the negative rapidly acquired sufficient density. A large number of negatives, varying in size from 7 x 5 to 16 x 18, were handed round for examination, and were very much admired.

A number of the members present expressed themselves much pleased with the process as illustrated, and with the results exhibited, intimating their intention of adopting it.

"Peerless" Stereo Lenses for Instantaneous work, per pair, $25.

ON THE USE OF EMULSIONS.*

ONE of our subscribers, a great amateur of new processes, sends us some information about emulsions which may interest our readers. He says:

My first experiments were not successful for the reason that I was not sufficiently acquainted with the manner of operating, and, moreover, I had no formula that would give me a regular result. I made numerous experiments with the pellicle processes of Messrs. Bolton and Carey Lea, and with the formulæ with excess of chloride of calcium of Mr. Newton, and I was not successful in keeping in suspension in the liquid the quantity of salts mentioned by

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* From the Journal de Photographie, September 25th, 1876.

BIRD'S HEAD-SCREEN ONLY $4.50.

these scientists. I cannot judge, therefore, by my own experience, of the relative value of these different emulsions as prepared by their authors; in my opinion, all formulæ may be good, and I think that success depends on some small details in the preparation. I advise all those who wish to make themselves familiar with these new processes to procure, if they can find it, a product upon which they can rely, instead of trying to make mixtures which very probably would prove to be failures. At present emulsions occupy the same position that collodion formerly did, and which now, instead of being bought, is prepared by almost every operator.

This is the manner in which I prepare the sensitized plates, and I advise all those who are not accustomed to these manipulations, differing but little it is true from the ordinary method, to follow exactly the following directions; later they may modify them if they please.

In the wet process as for dry plates, after a perfect cleaning in any manner, I make use of talc to insure the adherence of the film. The talc does away with the necessity of a *substratum* of albumen or gelatin, hitherto indispensable for dry plates. I flow the emulsion as I would the collodion, but in the dark, and a little more in quantity, as the thicker liquid flows less easily. I wait about a minute, and I then plunge my plate into a dish full of water (with about 0.20 gramme (3 grains) of nitrate of silver per litre, to prevent the bad effect of the salts contained in the water). After an immersion of a few minutes I take out my plate, and place it in the frame for exposure in the camera. I have sometimes allowed the plate to remain several hours in the water without remarking any diminution in the sensibility. The exposure is generally very short, but in certain cases, as for example the reproduction of badly lighted subjects, I have been able to prolong the exposure for a half hour, which is impossible with ordinary collodion. You will remark that this result is obtained without repeated washings, and without the addition of deliquescent substances. For developing, I make use of a dish into which I pour successively, in the following order, by means of a small graduated glass, an equal volume of the three following solutions:

1. Ammonia, ...	2 parts.
Water, ...	100 "
2. Bromide of Potassium, . .	150 "
Water, ...	100 "
3. Pyrogallic Acid, . . .	1 part.
Water, ...	100 parts.

As soon as the pyrogallic acid has been mixed with the other two solutions I plunge the impressioned plate, inclining the dish so that the liquid may flow uniformly and without stoppage over the whole surface of the print. 15 to 20 c.c. (4 to 5½ fluid drachms) of each solution are sufficient for a plate 5¼ x 7½. The image appears as rapidly as by the action of sulphate of iron, and reaches at once its maximum intensity. If the exposure has been too long the image is deficient in vigor and effect; in this case the desired intensity may be given by omitting the developing liquid, washing carefully, and flowing upon the plate before fixing a little pyrogallic acid acidified with acetic acid, to which are afterwards added a few drops of nitrate of silver in 2 or 3 per cent. of water.

Ordinarily carbonate of ammonia is used as an auxiliary to the development, but comparative trials have induced me to give the preference to ammonia, on account of its more rapid action. I have also tried the saccharated solution of lime, recommended by Mr. Davanne, but without finding any notable advantages, although persons worthy of belief have assured me that by its use they have obtained a very great diminution of the time of exposure.

Frequently, after the complete development of the image, I withdraw the plate, and, without washing, I place it in a dish containing hyposulphite of soda. The alkaline developer does not decompose the hyposulphite. If, after fixing, the image is too weak, I strengthen it slightly by using bichloride of mercury.

If the preparation of plates by the wet process is easy, as you see, the making of dry plates is still more simple. It suffices to pour the emulsion upon a plate that has been rubbed with talc, and to allow it to dry *without any other preparation*. It must

DRESDEN ALBUMEN PAPER—WHITE AND PINK.

be understood that this applies to my emulsion formula; but experiments that I have recently made lead me to think that other emulsions possess the same advantages. If this be the case I intend to leave the trouble of this delicate preparation to those who make it in sufficient quantity to obtain a reliable product.

L. C.

Conant's Retouching Pencils—per box of three, 50 cents.

TIMES RESIDUES.

There are some *funny folks* in the world, and sometimes they get around our table, and ask all sorts of questions. We have seen them when they have carbon-*ate* and nitre-*ate*, and would then say, *film*-y *plate* up again. But we would say that although we have *night-tricks* and *night-rates*, yet all photographic operations are performed during the day, and prices are usually *fixed* in *fatty inks;* and whether *tis-you* or some other *intense negative* advocate, even though *he-lie*-o-type, we *wood-bury* all differences, and be governed only by such *op-tickle* influences as shall free the mind from all *crow-mat-ic aberration*, or any other *fowl* or disturbing influences. Here is one who propounded the following questions to any who may be disposed to solve or *dissolve* the answers to each:

Photographic Queries.—(*By one who would like to know, you know.*)—When a photographer produces a bad "carbon portrait," does his sitter haul him over the *char-coals?* Every photographer knows Iodide of potassium; but, pray, who supplied her with the deadly chemical? Do photographers' *passée* wives avail themselves of the "*enamel* process?" Has an ambitious photographer ever attained to the full-*film*-ent of his dreams? If you put it in the "dark-room," does it make the camera *obscura* than before? When a photographer should do well and doesn't, may one conclude that he knows nothing of the "*ought-to*-type process?" Is respectable Collodi-"*on*" except when the occasion is especially festive? Do reserved photographers always go about in "masks?" If a male sitter, by judicious "posing," is made in a photograph to look *im*-posing, does not a female sitter, under like conditions, look *her*-posing? Do any but very opulent photographers perform their ablutions in a "*silver* bath?" Doesn't a gentlemanly photographer find it difficult to abstain from hurting the feeling of his "*sensitive* paper?" Has Dr. Darwin ever seriously studied the development of—"negatives?" Do those intelligent photographers who regularly read the best comic paper ever *Funny* "*Folk-*"*us* their clients? By "dodging a negative," does a photographer ever succeed in getting an affirmative? Isn't it very convenient for bachelor photographers to always have a "dry plate" about when they want their dinners?—*Funny Folks.*

Novelties are the order of the day, and photography is supplying its share, for business or for pleasure, for the ornamental and the useful. Scarce a day passes but some new application is made of it, and the demands upon it increased. The following is among the latest:

Novel Photographic Album.—If the public are on the one hand anxious for novelties, inventors and manufacturers are on the other no less anxious to gratify them. The very latest is a new description of ring for dinner napkins, introduced by Messrs. Pyke, of Ely Place, the peculiarity of which is that besides fulfilling its legitimate office, it also serves as a kind of photographic album. Incongruous as this may appear, it is nevertheless true. The rings are electro, and for about a fourth of the circumference are double, the outer portion having an oval opening. The narrow space left between the two is just sufficiently wide to admit a photograph, say the head and shoulders of the ordinary carte size, the oval opening of course forming the frame of the photograph. The rings are sent out fitted with the portrait of some celebrity, but there is no reason why a whole family should not have photographs of themselves inserted, and have the gratification of staring at their own "counterfeit presentments" while they eat their dinners. Truly, this is an age of progress.—*South London Press.*

On the question of Photographic Rights

HOVEY'S ALBUMEN PAPER—WHITE AND PINK.

a correspondent inforces his argument for prepayment by presenting the following anecdote from a city paper:

Looking Ahead.

About noon on Friday last there was a rush for the Fulton Ferry. Heading the eager crowd was an old woman who carried a big market-basket in one hand and a parasol in the other. As she attempted to pass through the entrance, the collector stopped her and said:

"Fare, madam."

"What fare?" she asked.

"Two cents," he coolly replied.

"Before I get on the boat, do you mean?"

'Certainly, madam."

She put the market-basket down, braced herself against the pushing throng, and with eye afire addressed the unfortunate collector.

"Do you take me for a fool?"

"No, madam; not at all."

"I want you, and the whole caboodle of you, to understand that I have been swindled and swandled all my lifetime, and if you think you can catch me, you're mistaken. I tell you that, mister."

"But, my dear madam," returned the impatient man, who was painfully aware of the anathemas that were hurled at him by the waiting crowd, "this is the rule, and I can't depart from it."

"Does everybody pay before they get on the boat?"

"Everybody, madam."

"But I won't!" she shouted, bringing her parasol down on the railing. "I'd see you to the mischief before I would. Suppose, and most likely it is so, that I went on your old boat and found tobacco-juice all over the floor, and seventeen babies in the seats, and a man with a broom running around—I never could bear a man with a broom—how could I get back the money that you swindled me out of?"

"But, madam, the fare is only two cents, and I positively assure you that our boats are clean and neat, and you'll find everything to your satisfaction."

"You'll guarantee that?"

"I will, ma'am."

"An' I'll get my money back if I get tobacco-juice on my dress?"

"Yes, madam, yes."

"Then," she said, slowly opening her purse, "I'll pay you the two cents; but, mind you, if you cheat me, I'll come back for that money."

And she handed him a five-dollar bill and waited patiently for the change, the boat meanwhile having cast off its moorings and got half way across.

An old bachelor immediately behind the old woman said:

"Oh, heavens! why was my mother a woman?"

Another man, with red hair, remarked:

"Push her overboard!"

But a little man, with a bloated face and an angry mien, cried out vociferously:

"Dumb the old woman—dumb her to dumbnation!"

"The American Albumen Paper."—A new brand of Albumen paper on Saxe or Rive, equal to any of foreign make in brilliancy and smoothness of surface, and susceptible of easier and more uniformly successful treatment in printing and toning.

The Scovill Manufacturing Co. has a full stock put up in packages of quarter ream, half ream, and one ream. Prices as follows, viz.:

¼ ream, ...	$7 50
½ "	14 50
1 "	28 00

For sale also by all dealers in photographic stock.

A correspondent offers the communication which follows on the Lambert Process. If any are interested to inquire further, we refer them to a fuller discussion of the subject in the *Philadelphia Photographer*.

The Lambert Process.

Dear Sir: In examining carefully Lambert's patent chromotypes at Anthony's, 591 Broadway, New York, and also Liébert's exhibit in Photographic Hall, I was forcibly impressed with their close resemblance to the "glacé" or enamel photograph; and, after more careful study, am of the opinion that the carbon tissue is, after exposure under the negative, attached to a polished porcelain plate, with the usual collodion and gelatin process for enamelling. The porcelain plate acting as the support during development, backing when complete with paper or regular mounts, and, when the tissue becomes dry, leaving the polished plates with that brilliant, glassy surface.

Now, is there any advantage in durability or artistic merit for cards or cabinets over the usual silver printing process?

As it is evident that carbon printing is to

CLEMONS'S ALBUMEN PAPER—ALL KINDS.

play an important part in the near future in large prints, the question is, is there anything really new in the vaunted Lambert's processes? Or is Swan's carbon process, with a few tricks added, with which most of us are already familiar, simply all there is of it?

I will add, that the rich coloring given in the chromotype is due to oxide or sesquioxide of iron with India-ink, or other colors in the preparation of the tissue, and is *not new*, but will be found in Swan's published specification.

Stephens's Patent Parallel Vise for Frame makers.

OUR FOREIGN MAKE-UP.

NOTES ON THE EMULSION PROCESS.*

BY A. ROSSIGNOL.

WE think it proper to add some practical remarks to the article furnished by one of our correspondents upon the emulsion process in the preceding number of this journal.

A well-made emulsion having been obtained, it is indispensable to keep the bottle in absolute obscurity. The yellow or red light of the laboratory, whatever may be its weak chemical action, act nevertheless upon the mixture, and after a certain time the images will become foggy and will lack delicacy; the particles which have been attacked will then produce in the development black spots which destroy all the brilliancy of the cliché. Using the precaution to always replace the bottle in a closed box or case, the emulsion may be preserved for a time yet undetermined, at least several months.

The preparation of the plates for the wet process is extremely easy, as has been seen, and gives to the operator the advantage of waiting for the propitious moment for the exposure, without the coating losing any of its sensibility. It is difficult to state with precision the ratios of rapidity of impression between emulsions and the ordinary wet collodion; the duration of the exposure may be from two to six times shorter with the emulsion, according to the age and the formula of the collodion placed in comparison, the acidity and condition of the silver bath, and the composition and oxidation of the developer (sulphate of iron). Allusion is here made to the producing of details slightly lighted, and not to the intensity of the image in the parts the most strongly impressioned.

The development may be made in a dish, or by pouring the developer at one time, as is done with the sulphate of iron. Amateurs, little accustomed to the alkaline process, will do well to try less concentrated solutions. They may employ the following formula:

Water, . . .	100 c.c., 3½ fl. oz.
Bromide of Potassium,	0.30 gr., 5 gr.
Ammonia, . .	0.50 gr. (or 10 drops.)

One-half of this quantity, say 50 c.c. (1¾ fluid ounce), is poured into a dish (5¼ x 7¼ inches), to which are added 10 c c. (3 fluid drachms) of a solution of pyrogallic acid with 1 per cent. of water; the dish is rocked to obtain the mixture, then the plates are immediately immersed with the precautions used for sensitizing in the silver bath. The image should be complete in less than half a minute.

If it is preferred to flow the developer on the plate, it is necessary to make use of solutions that are more highly concentrated, to double the quantities of bromide and ammonia, and to use at least three times more pyrogallic acid.

The image is generally visible by reflection only before the fixing, and it has even been remarked that often the ammonia partly dissolves the silver produced by the reduction of the coating, seen by transparency in the laboratory. This image appears clear, and after fixing, the cliché is much too weak to give good prints. Here is a very simple method to prevent this failure; it suffices to add to the above mixture of ammonia and bromide from 1 to 2 centigrammes (⅙ to ⅓ grain) of nitrate of silver, stir and allow to settle; a sufficient quantity of the clear portion is decanted for the development, adding pyrogallic acid at the time of using.

For the preparation of dry plates it is doubtless sufficient to flow the emulsion and to allow it to dry; but a washing is prefer-

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* From the Journal de la Photographie, October 10th, 1876.

BEST PORTRAIT LENSES—"PEERLESS."

able, and it suffices to prepare the plates as for use in the wet state, then to withdraw them from the water when they are free from greasy lines, and finally to dry them. Before developing, it is well to plunge them, at least for a minute, into a dish of filtered water.

THE BEST COLLODION.

MR. CLOUGHTON is surprised that photographers do not manufacture their collodion as they may want it. In his opinion it is a very easy operation, which requires but very little time, and for a number of years he has worked it with the greatest satisfaction. To obtain the collodion which he has been almost exclusively using for a long time, and which answers in every case, he makes use of two formulæ, one of which is by Mr. Hardwich and the other by Mr. Gough. He mixes equal portions of each of these two collodions, and the product leaves nothing to be desired.

Here are the two formulæ in question :

First Formula.

Ether, . . .	300 c.c.	10 fl. oz.
Alcohol, . . .	150 "	5 "
Pyroligneous Spirit,	150 "	5 "
Gun Cotton, . .	7 grammes 50.	115 gr.
Iodide of Ammonium,	2 " 50.	38 "
Iodide of Cadmium, .	2 " 50.	38 "
Bromide of Cadmium,	1 " 25.	19 "

Second Formula.

The guncotton and the liquids as above, but the salts are *double* iodides and bromides.

To obtain these, the author takes 136 parts of bromide of cadmium and 119 parts of bromide of potassium, which he dissolves in the smallest possible quantity of water; he then evaporates until crystallization.

The double iodides are made in the same manner, by taking 166 parts of iodide of potassium and 118 parts of iodide of cadmium.

For 600 cubic centimetres (20 fluid ounces) of collodion, he takes 6½ grammes (100 grains) of double iodide, and 2½ grammes (38 grains) of double bromide, which he pulverizes in a very clean mortar, adding from time to time as much as 150 cubic centimetres (5 fluid ounces) of alcohol, then the cotton, and finally the ether.

Each of these collodions is excellent, but when they are mixed in equal parts, and a neutral bath is used, nothing can equal their limpidity and the rapidity of their action. It is a collodion very superior to any that up to the present time has been offered for sale by the trade.—*Dr. Phipson.**

COMPETITION OF THE FRENCH SOCIETY OF ENCOURAGEMENT.*

Prize of 2000 francs for Improvements in Applications of Photography.

AMONG the prizes offered by the Society of Encouragement there is one that concerns photography, and of which the following is a recital:

A prize of 2000 francs will be awarded to the inventor of a process which will allow the transformation of a photographic negative, taken from nature and presenting finely graded tints, into a cliché which can be used on the printing press with the text, and which can furnish prints without modifying sensibly the ordinary conditions of typography, whilst giving at the same time results comparable to those obtained by the typographic clichés actually in use.

The Society of Encouragement is convinced of the great interest that the easy and general application of photography would present for scientific, artistic, and other publications. One of the great merits of photography is the fidelity, the authenticity of its prints, the delicacy of detail which it reproduces however complicated it may be. With it we need not fear, as in the work of the engraver, personal interpretation or error, and the transformation of the photographic cliché to use it for ordinary typographic printing, whilst avoiding this danger, would have the advantage besides of obtaining rapid execution and of realizing notable economy.

Photography will find in this application the occasion to take a new flight, and the Society does not doubt that this complete union with typography will be fertile in results important for the two branches of industry.

The prize, if won, will be awarded in 1880.

"Peerless" Portrait Lenses were used by the Centennial Photographic Co.

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* Paris Moniteur de la Photographie.

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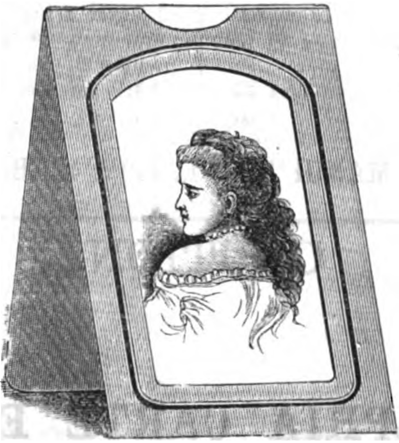

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1	3 x 3	2½ inch.	$60 00 per pair.
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Vol. VII. MARCH, 1877. No. 75.

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* * *

Examine the Table of Contents of A History and Handbook of Photography.

History and Handbook of Photography. A New Book.

MANY of our readers will recognize the above title, and remember with pleasure the several chapters we published in the *Times* last year, giving the history of photography. We now are happy to announce that we are about to publish this work, that American photographers may have the benefit of all it contains.

Although we are indebted mainly to the French people for the discovery of the photographic art, as well as for many of the important improvements that have from time to time made their appearance, and stimulated the growth of photography, as well as added to its beauty and usefulness, yet there are very few works relating to it in the hands of English readers that have come from the home of Niepce and Daguerre. It has been reserved for Mr. Gaston Tissandier to write one of the most attractive books on photography that has ever appeared in any country, and this we are now about to issue.

Those who are familiar with the peculiarly graceful style of many French authors, as well as those who have read the chapters of this book which have already been published, will readily understand why this work has become popular in Europe wher-

MORRISON'S NEW RAPID COPYING LENS.

ever the French or English languages are read.

The translation from the French is by J. Thomas, F.R.G.S., who has executed his trust with a fidelity that preserves all the beauty of the original French, and yet makes it a thoroughly English book, as far as processes and formulæ are concerned, the whole being expressed in terms and quantities that are most familiar to English and American photographers.

The contents of the book are divided into three parts and an appendix. Part first gives a history of photography, from the discovery of the camera obscura by the Italian philosopher, Porta, including all the interesting details of Daguerre's and Niepce's experiments, their partnership, the death of the latter, the final perfection and publication to the world of the daguerreotype process, the discovery of photography on paper by Talbot, and down to the use of collodion and the taking of negatives on glass.

Part second treats of the operations and processes of photography, describing and illustrating the studio and apparatus, the manipulations of the negative process; all the operations of the printing department; theory and practice, including the modifications required by various kinds of photography, such as landscapes, portraits, skies, and instantaneous photography, retouching, enlargements, dry processes, etc.

Part third enumerates the applications of photography, such as heliography, the Woodbury process, photosculpture, photographic enamels, photomicrography, microscopic dispatches during the siege of Paris, astronomical photography, photographic registering instruments, the stereoscope, photography and art, and the future of photography.

The appendix describes panoramic photography, the heliotype process, the phototint process, the most approved formulæ of the wet collodion process, a simple method of preparing dry plates, and English weights and measures.

The book is beautifully illustrated throughout with fifteen full-page engravings and sixty wood-cuts. It comprises three hundred and twenty-six pages, and is printed on heavy tinted paper. It will make a handsome as well as useful book, and an ornament to any photographer's library. Price, muslin $2.50.

Union Chocolate-Tinted Plates, per box, 200 plates, $15.

DRY OR WET.

From several different sources we notice in the foreign journals and *Photographic Almanacs*, there are arguments against the use of dry plates in the field, and in favor of the wet process. The disposition to know on the spot what success is being had, is overcoming the objections to luggage, especially when the ability to produce results equal, if not superior, remain with the wet process. One claims that the certainty of bringing home a lot of good negatives, as compared with the uncertainty of dry plates, and the failures which usually result, will more than pay the cost of an extra man to carry the apparatus, bring water, etc.

Again, dry plates require time to prepare before going out, and additional time to develop and fix after returning. It is true, that a greater number of plates may be used, and the chances are that an equal number of good plates may be secured; but the experience of dry-plate workers has been that the failures occur on the subjects they are the most anxious to secure; such as some rugged nook, with strong contrasts of light and shade, or a shady glen where the sunlight only penetrates at a certain hour of the day and where it is found to be almost impossible to get sufficient exposure on a dry plate while the light lasts. In considering this question, in view of the discussion which has arisen against dry plates, and the possible reaction that may take place in favor of the wet process, we cannot but reflect upon the amount of time, effort, and expense set at nought, should dry-plate photography be compelled to take a back seat. Associated with this branch of photography are the names of many of the most intelligent, industrious, learned, and scientific men that have ever given attention to the heliographic art. It would seem that invention and research had been exhausted in the multifari-

SCOVILL'S EXTRA CONVEX GLASS—BEST IN MARKET.

ous processes which have been claimed as meritorious or superior. We have had dry collodion, albumen, gelatin, emulsions, with preservatives of tannin, tea, coffee, beer, albumen, tobacco, besides numerous mixtures of poisonous drugs; and developers, acid and alkali, hot and cold *ad infinitum*, till the beginner is bewildered in the mazes of the chemical nomenclature which present themselves to him as the A B C's of dry-plate photography.

It is doubtless this great variety of processes, and the uncertainty of their merits, that have deterred many from practicing dry-plate work, and especially is this true of professional photographers, who find it necessary that time and effort should count, and who are disposed to adopt that process which they can have most completely under control, and which will yield them the greatest amount of successful work.

For the amateur, who makes photography a pastime, and to whom failures are of little consequence, the dry processes are preferable, notwithstanding their portfolios present the unsatisfactory condition described further on by Mr. P. Le Neve Foster.

We have long hoped that some reliable, quick dry process would come into general use, especially since such excellent results have been obtained with emulsions; and we still have faith that this will yet be brought about when sufficient time has been had to demonstrate how much of the many theories is really practical.

We are not prepared to predict, nor do we anticipate that either the wet or dry will supersede the other, but rather that each will find its proper place, and be adopted by professionals, as well as amateurs, according to the work to be done, and the convenience and capabilities of each.

"Cross Swords" Dresden Albumen Paper—White and Pink.

Stray Thoughts on Dry Plates.*

BY P. LE NEVE FOSTER, M.A.

At the risk of incurring the charge of heresy I venture to indulge in a few remarks on dry-plate photography. I start by at once admitting that, doubtless, a dry plate can produce work quite equal in every respect to a wet plate; but, as a rule, it does not. I am inclined to think that the great facility it gives, to amateurs especially, for the production of quantity does not conduce to quality. A larger quantity of average work is brought out; but on looking over the portfolios of friends, and among them some of the best dry-plate workers of the day, I cannot help coming to the conclusion that the general mass does not compare so satisfactorily with the wet-plate work as one could wish; in fact, we have rather gone back than progressed.

The dry-plate worker prides himself on the freedom with which he can roam when he starts for a day in the country. He is not incumbered with the heavy *impedimenta* of tent, bath, chemicals, etc., and is not anchored to one or two spots, as he says, like his friend, the "wet" man. He shoulders his camera, and with his changing-box and a dozen plates slung over his shoulder, fires away here and there, as the whim takes him, running the chance of hitting the right exposure, and priding himself on the idea that by careful developing he can remedy any little mishap on that head. He literally works in the dark, and trusts to a blind chance for results, however knowing he may be as a judge of light and atmospheric influences. I am, of course, free to admit that a very great deal can be done, and is done, in the studio on his return home; but any one of experience must, I think, admit that, in a large number of instances, though good average work can thus be obtained, the highest pitch of excellence can only be got when a fitting exposure happens by some good piece of luck to be caught.

Again, the dry-plate worker has left the spot. He has, probably, no means of returning to it to remedy the faulty exposure or faulty plate; for such things will occur with the very safest of operators. Even emulsions will sometimes fail. Indeed, if he can revisit the spot, all the circumstances of light, temperature, etc., have changed, and he has again to make a blind shot. These circumstances induce the dry-plate worker to retain on his plate many a negative which he otherwise would have wiped

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* From the British Journal Almanac.

"PEERLESS" PORTRAIT LENSES ARE THE BEST.

off at once, which a wet-plate man, profiting by the failure of his first, takes another and another till he can get a satisfactory picture. Hence our portfolio gets incumbered with a number of moderately good results, weighing heavily in the balance against the somewhat accidental "first-rater" that sometimes makes its appearance.

I question, nevertheless, with all his boasted ease of working, if, after all, he does not spend as much time and labor over his work as the wet-plate man. He must not forget the time he devotes in his studio to preparing his plates and developing, even taking into account the use of the admirable emulsions that are now temptingly offered for his use. He must not forget the whole batches, which will, in spite of all care, come to grief. As for purchasing his plates ready-made, I put that entirely out of the question; for I scarcely think that any one calling himself a photographer would willingly adopt that course, except, perhaps, on some rare emergency.

After all, how fares it with the "wet" man? It is true he must have tent, baths, etc., to carry in addition to his camera; and if the "dry" man suggests the horror of stewing and perspiring on a hot day, in a stuffy, "cribbed, cabined, and confined" little tent, and every possible inconvenience in the way of weight, etc., that can be imagined, let me suggest a very obvious remedy, viz., a large, roomy tent, simple in its structure, easily pitched, and easily moved. There are plenty such if even the ingenuity of our "wet" friend is not capable of contriving one. "But how about weight?" I think I hear my "dry" friend exclaiming with a chuckle. Reply: Hire a man at 2s. 6d. a day to carry it and the bath, with a small box of developers, and to attend upon you, fetch water, etc. I do not think there is any one out for a day's pleasure in the country who will grudge that small additional outlay. If the "wet" man does not work on quite so wholesale a scale as the "dry" man, I fancy he will bring home more good negatives, for he is more careful in choosing his subjects, and his summer's work will compare very favorably indeed in quality with the quantity brought to account by his "dry" competitor.

Such are my reflections and conclusions after a considerable experience on my own part as a dry-plate worker, and as an observer of the dry-plate working of others; so much so that I am seriously contemplating a change of system for next year, though I must confess there is a lingering charm in the supposed freedom of dry-plate action which operates in spite of reason against the notion.

Examine the Table of Contents of A History and Handbook of Photography.

Light, Exposure, and Development.*

BY H. A. H. DANIEL.

The subjects which I have chosen for my paper are perhaps those demanding the strictest attention of every photographer aiming at work of the highest and most artistic class. To those who are content with what the apparatus and chemicals will produce almost independently of themselves this paper would prove most uninteresting, superfluous, and, in short, not worth wasting time over; but I am happy in feeling perfectly assured that to such I have not the remotest chance of addressing myself this evening. I have done my best to bring together in a modest way certain results and facts that have come under my notice, but it were unreasonable for me to hope that *all*, or even the greater part of them would be new to you; I therefore ask your forbearance with me should I revert to matters with which many may be already familiar, although here and there they may perchance be fresh.

I have divided my paper into three subjects, the first of which is

LIGHT.

Of this we know there are two kinds, viz., natural and artificial, the former being composed of seven primary colors, which may be classed as follows, actinic and non-actinic. Artificial light may be produced in a large number of different ways, of one or two only of which I shall speak presently. One of the most evident effects of light is its power

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* A communication to the Bristol and West of England Amateur Photographic Association.

SPENCER'S CENTENNIAL HEAD-REST, $13.50.

of changing the color and nature of substances which come under its influence—glass, wood, vegetation, chemicals—in fact, almost every substance is more or less affected by it.

The first substance I mentioned, glass, is wonderfully changed by its action, although it may be a long time before we notice it. Some time since I saw certain fixtures removed from the surface of some plate glass, to which they had been affixed for a very considerable period—some years. It was then very manifest to what an extent the color of the exposed parts of the glass had been changed, and by "changed" I mean darkened. If after some years those letters we often see upon the glass of shop windows be removed, very often a most perceptible difference is apparent. The knowledge of this fact is of great importance to photographers, and should act as a forcible caution to them to expose their lenses to the action of light as little as possible; in fact, not at all beyond what is necessary during absolute work.

But while on the topic of lenses I would just remark that because a lens may *look* yellow and discolored it does not follow that it is so. Very often the cementing balsam in lens combinations will be rapidly acted on by light, being turned to a yellow tint, and making the lens appear discolored when it really is not.

We often find in the practice of photography that in a very dark and badly-lighted situation there is an object very worthy of the camera; but a photographer should never settle down under the idea that to get a picture is impossible on account of the want of light. If there be any at all near there is hope. It is surprising what can and has been done by the aid of mirrors. The well-known Dr. Vogel actually photographed some of the very remarkable interiors of the Egyptian supulchres in this manner. They were approached by subterranean passages. At the outer end of one of these a large mirror reflected the sun's rays on to the mirror at the inner end, which in its turn reflected them again on to the subject. The exposures were, of course, long; but the end was by these means successfully attained.

There is one great point in the matter of light about which we are often liable to be deceived. It is the great variety in the intensity and actinism of light at different times and seasons. The blue color of the sky proceeds from the fact that the particles of air reflect blue light, the quantity varying with the hour of the day, and being strongest when the sun is highest, and diminishing as the sun sinks. Therefore there is more actinism during the middle of the day, that is, between eleven and twelve. The power of light varies very greatly at different seasons. Thus, at Berlin, Bunsen found that, expressed in degrees, the chemical power of light varied as follows:

	12	1	2	3	4	5	6	7	8	o'clock.
June 20th,	35	38	38	37	35	36	24	14	6	degrees.
Dec. 21st,	20	18	15	9	0	..	..	..	..	"

Thus we see that in winter the chemical power of light is exceedingly weak. We may also be much deceived by great brightness in the light. It does not always follow that a bright day is a chemically light day; for instance, very easily may we be deceived on a bright sunny day in February or March. These are points which, if carefully noted and considered always, would save many a negative from being underexposed.

As a last remark on natural light I would mention its remarkable power in rendering certain substances insoluble; for instance, the gelatin as prepared for the mechanical printing processes. We all know how the negative is placed over the pigment paper and where the shadows are, and how the gelatin, having been acted on by the light, is rendered insoluble. *Apropos* of this I will just relate a circumstance in the German campaign of 1870.

In the campaign of 1870 the well-known pea-sausage was one of the most important articles of food for the army, and was prepared daily by thousands. The fabrication of the interior portion caused little trouble, but the obtaining of so many skins created much difficulty. As the supply fell short a substitute was sought in vegetable parchment. This paper, which is produced by dipping blotting-paper into sulphuric acid for about a second, then washing and drying, is distinguished by its skin-like properties of resistance. It is impenetrable to

NEWTON'S EMULSION FOR DRY PLATES.

water and difficult to tear. It is, therefore, used for the production of bank-notes. It was attempted to make sausage-skins of this paper by doubling a sheet cylindrically and pasting it together. No glue or gum can, however, resist the effect of the boiling water in which the sausage has to be cooked, and so the artificial sausage-skin fell asunder. Dr. Jacobson solved the problem by producing an adhesive substance, with the help of the chemical action of light, which could resist boiling water. He mixed the glue intended for the sausage-skin with bichromate of potash, and exposed the glued parts to the light. This made the glue insoluble, and the artificial skin endured boiling water thoroughly well. The number of sausage-skins prepared in this way by the chemical action of light amounted to many hundred thousands.

And now as to artificial light. I will simply speak of one or two kinds. Firstly, the magnesium light used by the aid of Solomon's reflecting clockwork lamp, a capital light for enlarging negatives. The electric light is very brilliant and most useful for lighthouses, but not so suitable for photography as the lime light. I have used the first of these, namely, the magnesium light, as very many others have, doubtless, far more than I have, and I have found it most useful. There are many other useful chemical lights very suitable as aids to photography, the formulæ for which I presume all present have seen given in different journals and books. For transparencies at night a very effective and actinic light will be found by using petrolin with a large proportion of solid paraffin dissolved in it. I have with its use successfully printed transparencies in five seconds. But light is a wide subject, and if we were to do only a little towards exhausting it to-morrow morning would still find us occupying this room, so I will now pass on to the next subject, namely,

EXPOSURE.

This is a branch of photography most important, and without correctness in which all our attempts at good pictures and artistic productions are useless. I will divide this section under two heads, "When to expose," and "How to expose."

When to Expose.—In taking pictures we may expose correctly, but unless we expose at the right time we are still not making *every* endeavor to obtain first-class pictures; and, unless high-class work be every photographer's end in view, he must expect to see many pass him in the rush for pre-eminence in the art. In the matter of views the time for exposure, of course, depends upon existing circumstances.

First and foremost, one of the matters of chief importance is the position with relation to the view in which the photographer places his camera; or, in other words, the selection and composition of the subject. You suddenly come upon a pretty bit of scenery, either near or distant, which strikes you as admirably suited for the camera. You have only then to look at it from some different points of view to have at once forcibly demonstrated to you what I mean. There is not one single object to which this does not apply, not even, we will say, a pig. A full view of two hams and a curly tail would certainly not be the most becoming that could be selected; there is a proper side even to bacon. How often do we see a gentleman's house converted into a rectangular elevation with sundry excrescences, instead of a range of buildings with lines pleasing to the eye, pretty grounds in front leading one's eye by easy stages to it, instead of a hard-looking house, the front almost flattening one's nose with its eagerness to at once let you know that the picture was taken for its sake.

A photograph is on the table which a gentleman in the city kindly lent me this afternoon; it was taken by a professional gentleman in Devonshire. He was asked to photograph the house in the distance as it appeared from the railway. You will notice that he has given a remarkably fine view of the rails, the roof of the intended principal object being only just visible. It will be generally conducive to artistic effect to get some agreeable object in the foreground, such as a tree, log of timber, rustic seat, and different objects at various distances, all of which will impart a far greater degree of perspective to the picture than it would otherwise have.

I also consider the position of the sun as

PARYS' NEGATIVE GUNCOTTON.

regards the subject of great importance. No rule can be laid down, but the photographer must use his own judgment as to the position of the sun that will produce a good picture. It may be almost invariably accepted that the sun should not be in the same position as the photographer; that is to say, with its rays parallel with the lens and camera. In landscapes a side light is, as a rule, to be chosen, with modifications according to circumstances. In the case of a river with trees on both sides, the chief care is to expose when the sun is in such a position that any very dark patches in the foliage do not exist, or at least not inharmoniously; also, that the shadows from the trees of one bank of the river do not darken the foliage of the other bank to such an extent as to rob it of its pleasingly clear definition. Clear definition must not be confounded with hard effects; most beautifully soft and yet clear definition with atmospheric effect may, and should be, obtained without any tendency to hardness. In the majority of cases it may be taken as positive that foliage is better rendered without the aid of the direct rays of the sun; in cases where water forms part of the picture it is *almost* always so. But very often very fine and most desirable effects may be produced by dividing the exposure, giving one part while the sun is shining and another with diffused light. I exhibit a picture marked No. 1, which was exposed in the manner I have stated. We generally find that the lighted or partly lighted side of a landscape is taken, and of course in a large number of instances it is a most suitable proceeding; but there are sometimes most beautiful exceptions to that mode of procedure. A view of the Dee, in North Wales, No. 2, on the table, you will notice is taken with the shaded side of the picture toward the camera, and I think you will admit that the effect is pleasing. But this, like many other features in photography, cannot be learned, as can a process; it requires a true artistic feeling in the photographer, strengthened by experience.

And now I will direct a few remarks under this head to portraiture. The time at which to expose is a point quite as important in portraiture as in landscape photography. Of course it is well known that in the interest of the plate the exposure should be commenced as soon after it is put in the dark slide as possible; but there are also other matters to be equally well considered. I have always found that it is a good thing to allow the sitters some time to look at specimens, and stroll about the studio or place of sitting, as that allows time for their nerves, heart, and muscles to get more composed after their walk or ride. Persons generally indulge on their way in such thoughts as, "How shall I look?" "I wonder if this sitting will do?" "Will my friends like it?" etc. Now, by giving them a number of interesting photographs to examine while you prepare, their imaginations and temperaments get generally a little more calmed, and the chances are much more in favor of a good picture. Should a friend be with the sitter I see no need of excluding him or her till you are about to pose; but immediately upon that, without any exception, I would urge that no one be allowed in the studio but the sitter and yourself. Prior to posing it is a good plan to get your camera focussed pretty nearly to the distance required, as every unnecessary motion during posing tends most materially to tire the sitter. Having arranged the sitter, it is advisable to expose as rapidly as possible and without delay; and now will be felt the benefit of having no other petty matters to attend to, distracting your own and the sitter's attention just at the most inopportune moment. Having next to nothing to do after posing but to expose, the time that the position and the facial expression is required to be maintained is reduced to a minimum.

There is one thing I would strongly deprecate: it is the custom of asking your sitter to "please look at that"—perhaps a mark, crack, or dirty mark on the wall; or "keep your eye towards that corner"—very likely the visible abode of a miniature *tarantula*. Should you know that you are photographing a married lady, have a pleasing little colored print or picture of a pretty child, etc.

With a few different little framed subjects or models for placing in different parts of your studio almost every sitter may have something agreeable to look at, and this is

S. PECK & CO.'S ACME CAMERA STAND.

a matter greatly affecting the ultimate expression in the negative. It is not the most easy thing to continue cheerful and happy-looking while regarding fixedly a brass-headed nail or a single painted eye peering at one, which latter I saw in a professional studio once. From the moment the posing is completed everything coming under the notice of the sitter should be pleasing and free from constraint if a pleasant expression be desired.

Immediately the lens is uncapped the operator should at once, by the sound of his feet, let the sitter know he has retired a pace or two, and that his eyes are not upon him; and, above all things, never let the sitter keep his eyes fixed till you are about to uncap the lens.

Union Chocolate-Tinted Plates, per box, 200 plates, $15.

The Alba Plates and Carbon.

Since the flood-tide of carbon printing has again set in, we would call the attention of those practicing it to the excellent medium, as a final support, we have in the Alba plates.

Their use for carbon photographs was first suggested by the editor of the *British Journal of Photography* in the early part of the year 1875; and as some of our American photographers have already intimated their purpose to use the carbon process for porcelains, we would suggest their trying, also, the Alba plates. They avoid many of the objections to both paper and porcelain, and with carbon it is not at all probable that any of the difficulties of silver printing with these plates would be experienced. They are for sale by Scovill Manufacturing Company.

Centennial Ferrotype Plates, per box, 200 plates, $9.

THE APPLICATION OF CERTAIN RULES TO COMPOSITION.

BY BURROWS AND COLTON.

It has often been contended that by observation of certain rules of perspective and composition pictures possessing all artistic excellence could be produced. To prove how far this hypothesis is correct it is only necessary to compare two pictures—one being made by an artist in accordance with his taste and experience, and the other by a man whose only guide are the rules laid down for composition and arrangement.

The artist may possess but little manipulative skill and have only a limited knowledge of practical photography. The photographer has all this at his fingers' ends, and produces his pictures faultless in chemical effect, light, exposure, etc. If made by rule they may be geometrically correct and in accordance with the rules alluded to, but what a difference there is in the results of the two men! The latter, examined closely, will be found most carefully arranged in the least important parts. Every finger is in its proper position, and not an earring, bow, or bit of lace out of its proper place. Each little fold in the drapery is arranged with painful mathematical exactitude, and a loose hair would, in the opinion of the photographer, mar the effect of the whole picture.

Place the copy at a sufficient distance to prevent one's seeing all the little perfections (?) and lines and general arrangement at once appear harsh and broken.

It is a common error amongst photographers of limited artistic ability to pay too much attention at first to the minor points of a composition, destroying all its grace and *négligé* appearance.

It inevitably occurs that those men who study more the *tout ensemble* of their compositions fail to notice the minor points; indeed, were they to do so, the whole vigor of the picture might be lost in the time spent in attending to such matters. We allude now principally to groups and portraiture. Take, for example, a group of children. They can be very readily posed gracefully and in such relation to each other that they present at a little distance a pleasing, natural pose. But try to arrange the little ones' fingers, the folds in their dress, hair, feet, etc., and by the time the operation is finished the children are fatigued and have moved, or, in trying to remain as they were placed, appear so unnaturally stiff and graceless that all the harm of the picture has vanished. If the photograph is a good one each face will be perfectly modelled, proper contrast exists throughout, and the lighting perfect; but one indescribable quality is deficient which might have been secured by exposing a plate before attempting the rearrangement.

We do not mean to say that all details should be neglected, nor that they are not necessary to the production of perfect results; yet it will be conceded that it is better to sacrifice these than the principal effect. We have a most conclusive proof of this in the works of the old masters—superb in their original state, and bold and masterly in execution. Finish them finely and they no longer possess a charm. As these are made so should every photographic composition be, that is to be viewed at a distance and not examined closely. To gain this end there can be no doubt of the advantages of versatile practice.

Many men put it down as a self-evident proposition that if a man has a little knowledge of many things such knowledge does not conduce to perfection in any one—that "Jack of all trades and master of none" does not appear to apply to photography. A man's success in one particular branch is no criterion that his knowledge is limited to it. The fact of his success is often evidence of his varied experience, which has given him opportunities to select that path to which he is best adapted. If, therefore, those who aspire to gain reputation for their compositions would give some attention to art principles, and not strive to arrive at artistic results by any mechanical or mathematical means or rules, their success would be more marked and their productions more creditable.

To compose anything at all presentable it is not only advisable but necessary that every photographer should have some artistic training; and although he may not be an artist innate, if by association with artists and careful observance of the means they resort to to put life and meaning into their pictures, one cannot become imbued with the principles of art, no amount of practice of stipulated rules can be of any avail. About the only reliable rule for composing is to keep the lines and lighting under control and in proper keeping with the subject, and until this is accomplished leave the rest alone.

Once there exists a correct appreciation of the relative positions of objects in a picture the rest comes naturally, as they are auxiliary points and natural to all artists. As a man who can compose a picture artistically in the rough (so to speak), whether upon canvas or in nature, must be an artist, his eye will soon detect any striking faults in the minor details. When this transpires it will be quite time to give more attention to these points.

In conclusion, try neither to copy others' compositions (which may be faulty), nor to make pictures by rule, as both are equally impossible.—*Brit. Journal of Photography.*

Examine the Table of Contents of A History and Handbook of Photography.

BLUE GLASS.

Why it is Useful in Preserving Health—The Chemical Ray of Sunlight.

To the Editor of the Tribune.

Sir: Three distinct principles are found in the rays of the sun—light, heat, and actinism. The light and heat rays are sufficiently well known, and call for no remark in this note. The actinic or chemical rays, their properties and power, are less generally known, and I offer a few words in regard to them, as furnishing perhaps the key to the blue glass discovery (?). It is the actinic ray which fades, bleaches, or rots textile fabrics, tans the skin, and, instead of light, is the ray which performs the operation of (so-called) photography. Its mode of action is by abstracting oxygen from bodies upon which it falls. Hence the reduction of the oxide of silver upon the photographer's plate to metallic silver; and hence the full rays of the sun falling upon fire will retard the combustion. Blue glass freely allows the passage of this ray, while red or yellow glass impedes it. That it is an agent of eminent power in the preservation or restoration of health in the animal economy, is shown in the well-known effect of red or yellow wall-paper in bringing pallor and generally deficient health to the occu-

EXAMINE A. O. CO.'S "MODEL CAMERA" FOR STEREOS.

pants of a room thus furnished, and in the equally well-known and favorable effects of blue wall-paper and furniture.

Its extensive and dominant relation to plant growth I do not refer to, as being beyond the purpose of this note. Medical men send sick and ailing people into the open air for more than one reason—that they may find a purer air to breathe and that they may have, not the light nor the heat ray—for these can be had within doors—but actinism. This they find in largest measure in the spring and summer months, and greatly less from November to April. The blue vault of a cloudless sky is also far more favorable than the leaden dome of an overcast day. The conclusion results from these facts that blue glass, by reason of its property of affording free transmission to the actinic ray, is a most beneficent agent in the conservation and promotion of health, and that its use, with especial reference to those who, because of malady or infirmity, pass their time principally within doors, is a most valuable recruit in the field of applied knowledge—for which all thanks to its military sponsor, General Pleasanton.

M. D.

ELIZABETH, N. J., February 13th, 1877.

Lewis & Holt's Collodion in Scovill's Pouring Bottles.

MATTERS OF THE MONTH.

MR. JULIUS HALL, of Great Barrington, Mass., whose reputation as a landscape photographer is well known throughout the East, has sent us some very fine specimens of portrait work. The ease and grace of pose, the management of the light, and the harmonious grouping of accessories, would do credit to our best New York artists. Mr. Hall uses the "Peerless" lenses for portrait work, hence always gets extremely delicate definition, remarkable depth of focus, and extent of field.

FOR SALE, cheap, one No. 3 Wide-Angle Rectilinear Dallmeyer Lens.

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A COMPETENT PHOTOGRAPHER, thoroughly posted in all branches of the business, desires a situation in a first-class gallery, city or country. Terms moderate. Can give the best of references.

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History and Handbook of Photography.—The historical part of the work is replete with interest.

SCHINDLER'S CELEBRATED POSING APPARATUS, consisting of Chairs, Antique Furniture, Rocks, Concave Backgrounds, and accessories, in great variety, may be found always on hand. Full assortment at Scovill's.

History and Handbook of Photography has a charming frontispiece by the Phototint process.

SCOVILL'S CONVEX GLASS for the photochromic process, is having an extensive sale, because of its superior quality.

It is more uniformly true in its curves, and freer from imperfections, bubbles, and pimples than any other make in market.

For sale by all dealers in photographic and artists' materials.

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THE EVAPORATING DISH-HOLDER is the latest improvement in dark-room appliances yet introduced. It was made to be used with the *Multum in Parvo Alcohol Stove*,

"PEERLESS" PORTRAIT LENSES ARE THE BEST.

but may be attached to the ordinary gas-burner. Its construction is such as to utilize all the heat, and, while the temperature of liquids may be regulated or rapidly carried up to 200°, they cannot be made to boil. This is a great desideratum, as the necessity for *watching* solutions is thus dispensed with.

The photographer may go about his work and leave his liquids to simmer as long as he desires.

The Evaporating Dish-holder is made in two sizes; one for the smallest up to one quart dish, the other from one quart up to one gallon size.

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S. P. C. Transparent Medium, for the photo-chromotype, is the best preparation yet employed for making photographs or other paper pictures transparent. When this Medium is used the pictures will not fade or lose their transparency.

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History and Handbook of Photography treats of all the important processes both in the negative and printing departments.

Messrs. P. Smith & Co., the "Old Reliable" stock-house, Cincinnati, Ohio, reports a decided improvement in trade, and, in verification of their assertion, have been stocking up with a fine general assortment of photographic apparatus and materials.

Scovill's goods may always be found at the "Old Reliable," where only the best of everything is kept.

History and Handbook of Photography.—This work should find a place on the shelves of every Photographer's Library.

Mr. Henderson George, of Indianapolis, Ind., sends us good orders for American Optical Co.'s apparatus and general photographic supplies. He writes that business is "picking up" in his section. He has a good line of stock, and offers good bargains to purchasers.

History and Handbook of Photography.—This work is printed in the best style.

Union Chocolate-Tinted Plates, per box, 200 plates, $15.

LANDSCAPE PHOTOGRAPHY.*

BY GEORGE MANSFIELD.

I can scarcely hope, in collecting a few everyday facts from my photographic experiences, to be of much use to those who are adepts in the theory and practice of photography; but the thought that there are every year a number of persons, both amateurs and professionals, who are taking up for the first time the cultivation of our beautiful art, makes me venture, in the hope of being of some use to *them*, to record in the always welcome pages of *The British Journal Photographic Almanac* the practical lessons experience has taught me, and which are so hard to learn except by repeated trials and many failures.

I shall begin from the first stage in the production of a negative, and jot down each little fact that might help a beginner, and which, perhaps, he may not have found recorded in his text-book.

Plate Cleaning.—Always have a stock of clean plates ready in your plate-box; take advantage of a wet day to clean them, and it will save precious time on the morning of some fine day when you are in a hurry to sally forth and do a good day's work. Fine days for landscape photography are in this climate few and far between, and when we meet with one we should take full advantage of it. Always make sure before you clean a plate that it fits your dark slide. There are various powders and polishes sold for plate-cleaning, and I have found them generally good, provided you take the trouble to *rub well;* but I think a most useful precaution, which has saved me many a negative, is to pour over the plate, when it is on the holder ready for collodionizing, a few

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* From the British Journal Almanac.

JACOBY'S PRINTING-FRAMES—Reduced one-half in price.

drops of alcohol and rub it dry with a tuft of silver paper (*papier Joseph*). A most useful article that paper is, and one should always have a supply of it.

Collodion.—Buy it ready made, and do not change it every time you see a new advertisemnt. It is, however, useful to try a few formulæ of home-made, so as to be independent in case one found oneself in a place where a commercial sample could not be procured. Contrary to the opinion of many landscape photographers, I prefer a collodion rather freshly iodized, say a week or two old; at least with Huggson's collodion, which I use, I find it more sensitive and *giving better density* at that age than after two or three months. Never use a collodion that requires to be colored with tincture of iodine.

Silver Bath.—I make my bath of fused silver and keep it neutral, never adding nitric or any other acid nor any iodide. When it gets out of order I try to doctor it; but, as I generally fail, I would recommend a fresh one, unless the photographer have plenty of time on hand and be fond of experimenting. I much prefer, for all sizes of plates, a horizontal bath. It takes less solution, which has at least this advantage, that if the contents get out of order one does not hesitate to make a fresh one. Another advantage, you can see your plate in the bath, and thus place it in the slide to the best advantage in case there be any slight defects in the film. I have found neither ebonite nor the French *carton durci* affect the silver solution.

Development.—My formula is:

Water, ...	100 parts.
Ammonio-sulphate of Iron (in summer), ...	3 "
Ammonio-sulphate of Iron (in winter), ...	5 "
Acetic Acid, ...	5 "
Alcohol, ...	5 "

If everything be working well, and sufficient exposure be given, the negatives will be dense enough; but should it occur, as it sometimes unaccountably will, that they are deficient in strength, especially in the skies, an addition of a small quantity of the nitro-gelatin developer to your ordinary solution will remedy matters. The following is the formula of the nitro-gelatin developer:

Gelatin, ...	3 drachms.
Water, ...	1 ounce.
Nitric Acid.	1 "

One drachm of the above to be added to six ounces of a forty-grain solution of ammonio-sulphate of iron. This developer should never be used alone, but mixed with the ordinary developer according to the density required, increasing exposure for every addition.

Fixing.—Hyposulphite of soda, despite its faults, is the *safest* agent to employ. For outdoor work away from home I prefer to fix when I return. It saves both time and trouble, and, if your collodion be good, the film will not give way even if it should have dried. See that your fixing hypo is really a saturated solution.

Tents.—If you use a tent with a tripod let the tripod be short, so as to work seated on your plate-box. It is less fatiguing, the tent less likely to be blown over, and easier to carry. After a day's work never let the box containing your negatives *out of your hands.*

Dry Plates.—I must confess that I have had much more success with wet than with dry plates, and always returned to the former as the most certain. I have, however, produced good negatives with Mr. H. Cooper's collodio-bromide formula, as given in the *Almanac* for 1871, and with Colonel Stuart Wortley's emulsion, using for both a tea preservative. The strength of this preservative does not seem very material; about what would be called "a strong cup of tea" is the best. It has one slight defect, it renders the film very tender and easily scratched. I have thought this might be prevented by adding albumen; it would, however, probably lessen tne sensibility. These plates intensify very easily with iron.

I have been unsuccessful with that most convenient of all processes, the washed emulsion; but hope, before next summer, to have overcome the difficulties, as others seem to have done. It would be a great convenience if the dealers in photographic apparatus, to whom we owe so much, would supply bottles, pouring-bottles, filters, and

BIRD'S HEAD-SCREEN ONLY $4.50.

funnels in non-actinic glass for this process. The difficulty of keeping a sensitive emulsion always out of the light, especially when travelling about, must, I am sure, deter many from trying the process.

With another suggestion to the trade I will terminate these few hints: Could not the manufacturers of paper (Saxe and Rives) be persuaded to make their sheets so as to give four 12 x 10 prints? To those who, like myself, use ready-sensitized paper, and only work 12 x 10 plates, the waste of money and material is considerable, and what ought to be an economy becomes an increase of expense.

Examine the Table of Contents of A History and Handbook of Photography.

THE SPOT PLAGUE.

BY THOMAS M. LAWS.

Of all photographic ills, the spot plague seems to be the worst to bear, and the least understood. Many fine days' printings have succumbed to its ravages. Notwithstanding the amount of discussion and liberal treatment it has received, this great bane is constantly cropping up in various printing-rooms in one or other of its many phases, if the experiences of poor unfortunates who periodically pour their grievances into these pages are to serve as an index. That albumenizers are alive to its prevalence is evidenced by the recent articles by Mr. Skinner. No sooner is one species successfully explained away, than another appears, and for a time holds its sway.

During the past year, spots, blue-white, sickly-looking, broke out among our prints This being their first appearance in any shape among us, we were completely at a loss to divine their cause.

"It's the paper," cried the printer. "No; it is the sensitizing," muttered the toner. "It must be the washing," feebly whispered the mounter. The spotter said nothing, "his heart was o'ercharged to express." The young apprentice (safe in innocence) ventured, with some of the worst, to the principal. "Then and there was hurrying to and fro." "Who mixes the silver?" "Has any one been inventing anything?" Questions like these were rapidly asked, and as rapidly disposed of, resulting in the dispatch of a telegram for different paper. For awhile all went well, till the sample lot was used, and a new ream opened. "Any spots?" were the words that trembled on our lips next morning. "Just the same;" was the dreaded answer. Time went on; various theories were mooted and freely discussed. "It is the spray sparkling on the prints directly they are placed in the trough." "No; it is that new sensitizing-room — something comes from the plaster and spoils the paper." This last was indeed very feasible, for we well knew that a newly-plastered room, for evident chemical reasons, is not the place to dry sensitized paper. For awhile this put us off the right track, till getting the same spots on resorting to our old room proved it was not the cause. We then determined at every printing to use principally paper that had never troubled us, along with pieces of spotty, previously marked, and prepared and finished in different ways.

Then ("'twas passing strange!"), do what we would, we could not produce a spot. This was rather annoying—all our tests, of course, went for nothing. This was the case during some very dull weather, with fewer prints than usual, which gave us the first glimpse of the cause of our trouble. Directly the weather changed, and the number of prints increased, the spots broke out.

The question now arose, "What was the difference in treatment of a small and a large batch of prints?" It was then we came to the glaring fact, that the paper received from a well-known, old-established firm could not survive even a couple of minutes over a certain time of immersion in the hypo solution. The largest batches of prints were, in our practice, left a little longer in the hypo than the others, and this was found to be the cause of the spots. If prints from this particular paper (which probably is now in general use) remain in the hypo (say) ten minutes, no spots will result; but two or three minutes more, and spots will appear while in the washing-trough, and with still longer immersion

THE BEST ALCOHOL STOVE—"MULTUM IN PARVO."

they will gradually gather while looking at them in the hypo.

While recognizing the great importance of the fixing of prints (which ought to be gauged as accurately as any operation in photography), yet there is no reason why such penalties should ensue by overstepping the time of immersion, and albumenizers should see to it that no paper is sent out but will admit of some latitude.—*Photographic News.*

Lookout for a New Book on Coloring Photographs.

ON THE SPOTS IN COLLODION EMULSION PLATES.*

BY LEON WARNERKE.

Many of the emulsion dry-plate workers are familiar with transparent spots making their appearance during the development of the plate. These spots are generally circular, varying in size from immeasurably small specks to sometimes an inch in diameter. In the centre there is an opaque spot, often visible to the naked eye. I am aware of the theory attributing the cause of these spots to the crystals of the double salts of silver; but my investigations suggest to me quite a different explanation of their origin.

Having collected a rather considerable number of specimens of spots I examined them under the microscope, by which means I have been able to determine at least seventy-five per cent. of opaque centres, which are the real cause of the spots. There are various foreign bodies, mostly of organic origin, such as worn-out fibres of cotton, linen, wool, etc. Some I distinctly traced as proceeding from my own garments, being of a certain color; epidermis from the head, very well determined by the polariscope; minute particles of insects, such as mosses, spiders, and black beetles; hairs, having their origin in various sources, etc., etc. In no case could I find a crystalline body in the centre.

Based on my observations I am led to believe that foreign organic bodies floating in the air gain access to the emulsion during its preparation, or during the preparation of the plates. In this last case the mischievous particles can be found on the glass; others come, with the emulsion, from the bottle; others, again, fall from the air on the plate after it has been covered with emulsion. In the bottle they are introduced with pyroxylin containing cotton untransformed by acid; they are introduced from the air during the manufacture of emulsion; and, lastly, collected from the plates during the process of coating.

Every organic particle in contact with bromide or iodide of silver acted on by light, even the very feeble light of the operating-room, or by heat used for drying the plate, will reduce the silver or form subbromide or subiodide, liberating bromine or iodine. The free bromine or iodine disseminated in the collodion film all round the point where it was generated will produce the well-known effect of such bodies on the emulsion, insensitiveness. It is very easy to imagine that on the more or less reducing nature of the particle, the quality of the collodion, and also its acid or alkaline reaction and temperature, the size and appearance of the spot will depend. One of my specimens, of unusually large size, is not quite transparent, but the image is visible. Evidently the claw of the spider forming the centre, acting on the bromide of silver, liberated bromine, which, favored by the surrounding conditions, was disseminated over so large a surface that it could only diminish the sensitiveness of the film, but not totally destroy it, as in the case of some smaller spots when bromine was more concentrated.

It is generally recognized that an old emulsion is less liable to produce spots than a fresh one. This is quite in conformity with my theory. Organic particles in the emulsion reduce, after a time, metallic silver. Liberated bromine, while dissolving in the collodion, will imperceptibly affect the sensitiveness of all the emulsions; but the cause of the spots is destroyed. The following plan to cure the spotty emulsion is based on this theory: Expose the bottle containing the emulsion to the light for a very short time, and then keep it in the dark for a day or two before using. De-

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* From the British Journal Almanac.

PHENIX COLLODION, in 8 oz. Dreg Bottle, 60 Cents.

struction of the organic particles will, by this means, be hastened, but the emulsion will not suffer by it.

Experiments in this direction showed me that emulsion (washed), when exposed in the bottle to the light, if used immediately after exposure, will produce fog; but if left standing in the dark afterwards for a length of time in proportion to the amount of the light which has acted on it, will show a clear, although a less sensitive, image in the next stage, and improved general qualities if kept still longer. Evidently the bromine liberated by light, when kept afterwards in the dark, will slowly recombine again, and sometimes in a more favorable manner, photographically, than when in its original state.

Using for my experiment a sample of indifferent (washed) emulsion I found not only sensitiveness and intensity improved, but the appearance of the emulsion also; it became of a more opaque and more dark ruby color by transmitted light.

Union Chocolate-Tinted Plates, per box, 200 plates, $9.

PICTURE HANGING.

As in exhibitions, or even in the photographer's gallery, a great deal depends upon the arrangement and grouping of pictures, so as to give each its true value or best effect, we commend to those interested the following, from an article by Mr. E. Dunmore, in the *British Journal of Photography:*

"In the first place let us see what are the conditions and difficulties with which a hanging committee has to deal. These, I think, are comprised in the number of works, the quality of the works, and the construction of the frames inclosing them. I will take for granted suitable premises and appliances are at hand, and the consideration is the disposition of the pictures.

"With regard to the quality of the pictures, none are rejected on account of badness of quality. This induces another difficulty in the matter of number; for the greater the number the more difficult it becomes to place equally deserving pictures in equally good positions. This, perhaps, is the greatest difficulty of all, and, in all probability, is the cause of most dissatisfaction. Then, again, in the matter of frames: an unsuitable frame may prevent an exceptionally good work from occupying the position it otherwise would do, and to which it is entitled. On the other hand, photographs being monochrome, there is, broadly speaking, little consideration required in the matter of contrast of color; that is, the color of one photograph is not so much injured by juxtaposition with one of a different tone as is the case with paintings, where one abounding in delicately-warm tints is hung side by side with another in glaring orange and red. The conditions to be observed in hanging photographs are, therefore, somewhat simplified.

"We will assume that the care of the hangers is to give the best pictures the best places, and to arrange all in a symmetrical and pleasing manner, making most of the space at their disposal.

"Now let us take a hypothetical case. A large number of pictures of an average quality are sent in; a twentieth part are exceptionally good — some three or four very much in advance of the rest—with the usual contingency of rubbish. The primary consideration is to show the pictures to the best advantage, and the rule, other things being equal, is to place the large pictures above the line; the rubbish may either be skied or made skirtings, the best pictures being placed on the line, and the intermediate spaces filled up with average work. This programme, to be fully carried out, necessitates all the pictures being delivered at the rooms before the committee commence their duties of hanging. On arrival they are looked over and roughly classified (or should be) to facilitate their final disposition. It is reasonable to think that if pictures are delayed in delivering until the hanging commences the position assigned will be somewhat faulty, and unavoidably so.

"Suppose, now, an exhibitor sends in a dozen or so separately framed small pictures of particularly good and artistic qualities: it would be more to the satisfaction of the photographer, and decidedly so, for the photographic critic and admirers, to see those works arranged together so that the

S. PECK & CO.'S ACME CAMERA STAND.

treatment of the different subjects could be carefully noted, besides the fact that a number of any particular class of small pictures hung together will present a more impressive and better appearance than if they were scattered broadcast over a room. This is, I think, a very important matter to be borne in mind. One single excellent picture is always worth seeing and studying, while a whole crowd of mediocre work only tires the eye and distresses the examiner in his disappointed search for something good. If, therefore, these small gems are distributed about amongst the rest they do *not* gain by contrast of this kind, and the real contrast is not nearly so great as if they were hung together; moreover, exhibitors of photographs produce them of the particular tint or color they deem best suited to the subject, and the contrast of a rich brown with a cool gray is only to exaggerate each color, which is detrimental and quite different to the producer's desires or tastes. This kind of contrast should, therefore, be avoided. For example: take a number of any small objects of a similar general appearance, but worthless in point of quality, although they would show the greatest contrast in this respect to one of exceeding excellence, were they all exhibited in close juxtaposition the good would be damaged sooner than improved by such contrast. The *one* would be lost amongst the *many*, and frequently prevent the worthy object being examined at all. A sufficient effect of contrast, for all intents and purposes, is the fact of such pictures being hung in the same room.

"My idea of good hanging is that, in addition to symmetrical and judicious arrangement, each exhibitor's works, when consisting of several pictures, should be massed together, to preserve as much as possible the effect the photographer originally obtained. Country exhibitors are especially affected by this apparent change of color. The usual light of a London exhibition room in winter being of such a different character to that in which the pictures were produced is often alone the cause of disappointment as to the appearance of these pictures when hung for public criticism, irrespective of being contrasted with others of an entirely different tint that merely adds to the difficulty and depreciates the quality of the color in a manner that could not be calculated upon by the producers. If these little matters were attended to I think the probability is that greater satisfaction would be given to all, and the public would be much better enabled to judge correctly of each photographer's skill or incompetency."

To be issued shortly, a New Book on Coloring.

OUR FOREIGN MAKE-UP.

A Good Paste.

The following is the formula recommended by Straub for mounting photographic prints:

Arrowroot, first quality, .	52 grammes	(1¾ troy ounces).
Gelatin, . .	6 "	(93 grains).
Alcohol, . .	35 "	(1¼ troy ounces).
Carbolic Acid, .	6 drops.	
Water, . .	525 c.c.	(18 fluid ounces).

The arrowroot is reduced to a paste with 40 grammes (1⅓ troy ounces) of water. Then the rest of the water is added with the gelatin in small pieces. Boil, carefully stirring for four or five minutes. The mixture is allowed to cool, and as soon as it has become tepid add, in very small quantities, and stirring, the carbolic acid which has been previously dissolved in the alcohol. This stock is kept in a large glass bottle with a wide mouth, and a cork stopper to exclude the dust. Only enough paste is taken out for the work on hand.

This is probably the best preparation of the kind which has been made known up to the present time.

MICROGRAPHIC ESSAY ON THE MOLECULAR REACTIONS IN THE IMPRESSION OF THE SENSITIZED COATING.*

BY J. GIRARD.

When examination with a microscope is made of the collodion coating, from the

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* From the Moniteur de la Photographie, November 1st, 1876.

MORRISON'S NEW RAPID COPYING LENS.

moment when it is plunged into the silver-bath until the image is definitely fixed, we may observe numerous modifications in its molecular texture. These modifications take at first a basic character proper to each reaction, and then assume variations differing among themselves according to the elements placed in presence; they play an important part in photographic manipulations, for there are grounds for supposing that in determining, by means of the microscope, the effects produced in the impression of the sensitized coating, we can discover there the necessary elements for investigations in the case of failures.

The crystals of iodide of silver which are formed on the collodion, during its sensitizing in a neutral silver-bath, vary according as the collodion is old or new. In the first case, the surface presents a reticulated appearance, in which may be discovered irregularities or whites; in the second case, it is covered with well-characterized crystals, uniformly distributed; but in the places where the nitrate of silver has remained in excess, other radiating crystalline systems, like roses, show themselves in spots visible to the naked eye. If the plate has been washed, on coming from the bath after sensitizing, no perceptible crystals will then exist. It is manifest, therefore, that different reactions show themselves in collodions more or less old placed in the same silver-bath.

The reducing agent, either the sulphate of iron or the pyrogallic acid, causes the blacks and half tones to appear, by forming a precipitate on the infinitely small crystals incorporated in the thickness of the sensitized coating. The same reaction is also made on those which adhere to the surface, but without influencing the coating proper. This excess is kept there by capillary affinity, and constitutes the *fog*. It is certain that this multitude of crystals is superficial, since the fog may be removed with a wet cotton tuft, provided the coating offers sufficient resistance to bear its contact.

Examining any negative with a magnification of at least 800–1, we remark first in the clear portions, those that are the most diaphanous, crystalline molecules, no larger than the two-hundredth of a millimetre; it is these that form the fog. In the second case, in following gradually a tone of progressive intensity, we see in the thickness itself of the coating a number of small amorphous crystals, which are so much the more numerous in proportion to the darkness of the tone. They form by their agglomeration a felted concretion, impervious to light. Light decomposes the silver salts in a latent manner, the crystals of which dissolve themselves by the action of the reducer.

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THE OIL PHOTO-MINIATURE.

This is a picture that is now growing in popularity, and we take pleasure in presenting, for the benefit of our readers, the process given below, as published by Messrs. Rice & Thompson, of Chicago, and freely distributed with their compliments. We are sure that every lover of this beautiful picture will appreciate the generosity of this enterprising firm in giving gratuitously a process that has been held and sold as a secret.

Process.

"If the print you desire to use for the Miniature is mounted, place it in clear water, leaving it immersed until it separates from the card. Having your unmounted print ready, cut it a little smaller than the convex glass you are to mount it on. You will have prepared in a convenient vessel a little thin amylum paste. Have your convex glass perfectly clean; wet the print and then blot off the surplus water; paste the face of the print with the amylum preparation, also covering the concave or hollow side of the glass with the same, using great care to work the paste smooth, both on the print and glass; lay the print on the glass, the prepared surfaces together, and proceed carefully to work the bubbles out with the fingers, after which lay two or three thicknesses of some soft, tough paper on the print, and with an ivory paper-knife, or flat stick, with curve about the same as the concave surface of the glass, work the print down to the glass, forcing out all the air; work from the centre of the glass toward the edges, and with great care, using very light pressure to avoid breaking the glass. The mounting of the print should be done quickly, as the paste dries very fast. When perfectly dry pour on a little **Castor Oil**, taking a small piece of fine sponge, and gently rub the oil over the whole of the surface of the print. Use oil freely in order to saturate the paper; when perfectly translucent take a small piece of fine sponge and wipe off the surplus oil. Your picture is now ready to apply the color to the eyes, which is the only part of the work done directly on the print. (Directions for this work will be found below.) Having colored the eyes, take some narrow strips of thin cardboard, and with the mucilage, paste the strips on the concave surface, as near the edge as possible; this is to keep the two glasses separate, and prevent the spots which frequently occur when the second glass is laid directly upon the oiled print. Having the strips of cardboard set, take another convex glass, perfectly clean, the same size as the one having the print; place the two together, putting the convex surface of the second glass into the concave surface of the one having the print attached. This clear glass, when in place, receives the color for hair, complexion, drapery and background. (Full directions below.) The color can be removed wholly, or in part, from the glass on applying a little turpentine with a cloth. Any mistake in laying the color, can be easily and quickly corrected as above. Having applied the color, back up with a piece of card, and with some strips of the adhesive paper, moistened *a la postage stamp*, or with a brush dipped in clean water, bind the glasses and back together, and your *Miniature* is ready for framing.

Oil Coloring for Photo-Miniature.

Eyes.—The color for the eyes is applied directly upon the prepared photograph, use brush No. 3. Blue eyes, use Prussian blue mixed with a little ivory black. Brown eyes, use Vandyke brown. Gray or hazel eyes, Prussian blue mixed with Vandyke brown and silver white.

The color for flesh, hair, drapery, and background is applied to the concave surface of the clear glass which is placed over the mounted print.

Flesh.—Use vermilion, silver white, and chrome yellow, mixed to suit. For children, use rose madder or carmine in place of vermilion. For dark complexion, dull the color by adding Vandyke brown.

Hair.—For blonde hair, use half yellow ochre and Vandyke brown. For lights, use Naples yellow. Brown hair, Vandyke brown. Black hair, ivory black, silver white, adding a little Prussian blue. For gray hair, use silver white, Naples yellow, black, and a little Prussian blue.

Drapery.—Whatever color suits.

Background.—Your own judgment will suggest the proper color to use.

If you want to change the work in any way, take a small piece of cloth dipped in turpentine, and remove the color.

To Prepare Amylum Paste.

Take a heaping teaspoonful of the amylum, put into two ounces of cold water, in a tincup. Stir until dissolved, then bring to a boil, stirring constantly. If too thick, add boiling water."

January, 1877.

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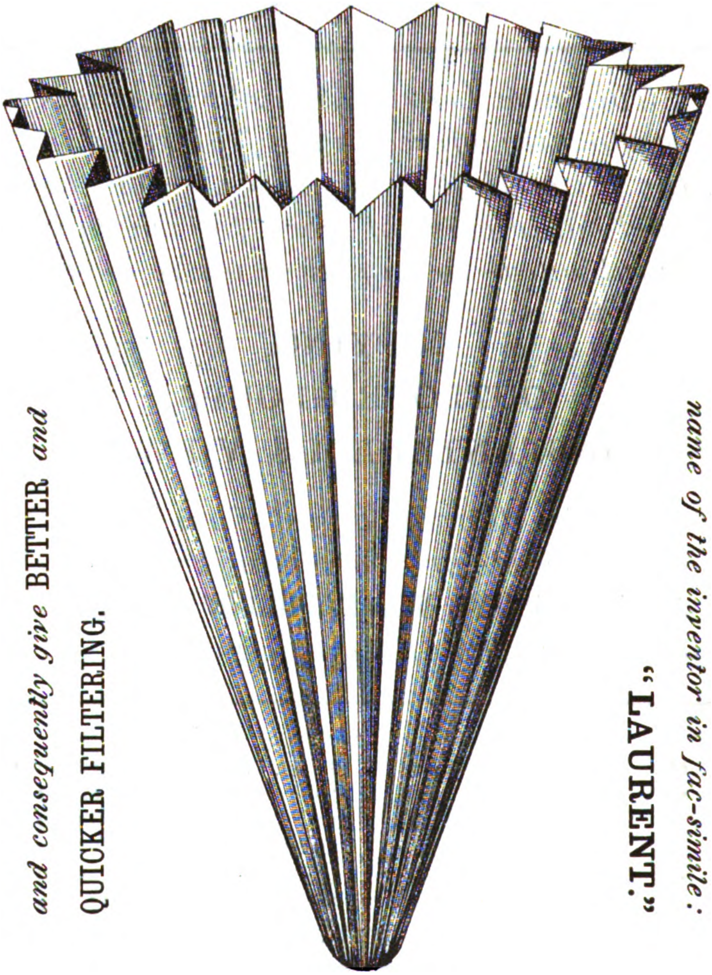

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Vol. VII. JULY, 1877. No. 79.

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At this season of the year, when photographers are entering the field for outdoor work, and after the outdoor work is over, they will be brushing up and getting ready for portraiture, we feel that we should say a few words again upon a subject which has become somewhat hackneyed in our pages, at the same time one on which we feel justified always to write, because of the good it will do to our patrons. We believe every reader of the *Times* is fully aware of the advantages of having first-class apparatus, in perfect order. Sometimes it is possible to get apparatus that will keep up appearances for a little while, but before very long it begins to crumble, to break, to leak light, and finally to fall apart at some very inopportune moment. It is only a few years ago since it was absolutely impossible to get a first-class camera box of American manufacture, at least first-class in the sense nowadays, and when a few enterprising men started a factory for the production of such apparatus, the idea was largely ridiculed, and predictions were plenty that they never could succeed in making business. As all know, however, not only have the works which these gentlemen started

MORRISON'S WIDE-ANGLE PORTRAIT LENSES.

grown into a large factory, but many similar ones, making comparatively good apparatus, have sprung up to help supply the market, and over all and above all in the products of these establishments stands unrivalled the apparatus made by the American Optical Company. We are the proprietors of the works, and perhaps in true modesty should not say so much; but we believe in the principle that when a man does make an article which he knows to be good, and the best to be had, that he is always justified in letting the public know of it, for it is for their good as well as his, hence we maintain once more that any photographer who studies his own advantage and interest will give preference to our apparatus.

Not only do we claim many advantages of construction over any other, such as adjusting and focussing screws and the arrangements for the swingback and swingfront, but for the entire makeup, since we use nothing but the best seasoned wood, carefully selected by our foreman, employ none but the best of workmen, and finish in the highest style of our art. The consequence is that when our cameras and other articles are put to the test of work, and hard work, they stand, and they last, and give pleasure and satisfaction to the operator. Sometimes we are told by our customers, the stockdealers, that complaint is made to them of our prices, and the assertion made that apparatus can be had at a much less price. This latter assertion we most heartily acknowledge, though we do it sorrowfully, for we do grieve that there is still a demand for useless traps which cause the photographer loss, and disappointment, and trial. As to our own prices, they are lower when all the advantages are taken into consideration than any other, and our apparatus is not only the best but the cheapest to buy. It is now used in all parts of the world. We know of its being in use in Africa, France Spain, Italy, England, Ireland, Scotland, Wales, Mexico, Germany, Vienna, India, Australia, and the Sandwich Islands, and it stands all sorts of weather, cold and hot, damp and dry alike.

As to variety of manufacture, we call the attention of our readers to our new illustrated catalogue, which explains the variety, enabling any photographer to find what he particularly wants, and if he does not, we are ready and willing and able to construct apparatus of any form or style required. All we ask is a fair inspection of the American Optical Company's apparatus before you purchase; of your decision in the matter we do not feel afraid. Catalogues free.

Swasey's Scenic Backgrounds. Try them.

NEWTON'S EMULSION.

Scovill Mfg. Co.

Gents: The *Times* has taken so great an interest in emulsions that I beg to contribute my own experience. When Mr. Newton first published his process, it was recommended as giving results fully equal to those of wet plates, and was claimed to be in every respect perfect. I therefore obtained from you a quantity of the emulsion, with full directions for its use. I expended a great deal of time and pains upon it, only to find it worthless. I therefore abandoned it. Subsequently, however, this wonderful process is *perfected*, and now everybody obtains the most brilliant results under the new formulas. I was deluded into the purchase of a second batch of the emulsion. This proved to be entirely unlike the first in every respect except the one—it was good for nothing. But recently this perfect process has been perfected again. The new developer insures success, and everybody is delighted—according to the *Times*. I am persuaded that this time I "will certainly find the emulsion satisfactory." A third lot is obtained and carefully tried. Like the others, it makes a negative covered with lumps and black specks, and so weak and thin as to be entirely worthless. Indeed, after repeated and painstaking trials, the emulsion proves a disgusting failure. By giving this article equal prominence with the statements that have induced me to purchase several dollars' worth of worthless emulsion, you will serve the interests of your readers.

Charles Jewett.

810 Gates Avenue, Brooklyn.

Dr. Jewett does not seem to have met

S.P.C. OUTFITS FOR CHROMO-PHOTOGRAPHY, $2.50 each.

with success in the use of the emulsion process, and we would kindly ask him to give us a detailed statement of his manipulations, in order that we may help him out. We see no reason why he should not meet with the same success as Prof. Draper, College City of New York, Prof. L. C. Landy, Columbia College, New York, General Newton, United States Army, R. W. Leaming, of Philadelphia, and a host of others, both practical photographers and amateurs. Will the doctor kindly answer the following questions and oblige us?

1. Were your plates talced or albumenized?

2. If albumenized, did you use ammonia or carbolic acid to keep the albumen coating?

3. How long exposure did you give? Were the plates wet or dry when exposed?

4. In developing, how did the plate appear?

5. Under what kind of a light was your developing done? Also the other manipulations.

6. What make of lens was used, and the focal length? (This we ask that we may judge of the probable action of the light.)

7. What was the character of the negatives when finished?

8. How long do you generally expose, with the same lens, under same conditions, when using a bath plate?

We will reply by letter privately, or through the columns of the *Times*, as Dr. Jewett may prefer.—Ed. *Times*.

S. P. C. outfits for Chromo-Photography are the best.

Photographing at Night.

Our clear smokeless American sky gives us no idea of the drawbacks connected with photographing in a smoky and foggy city like London, England, where the days in the business season are much shorter than here, and even the best parts in any season are usually obscured by smoke, mists, clouds, and fogs. It is not surprising that such a locality should be the first to develop the method of taking photographs by artificial light, which several years ago was attempted in the United States, but with very indifferent success. The simple reason of this was that those who attempted to apply the method had not the least artistic idea of the kind of illumination required to produce a good and pleasing picture. These photographs had no middle tints, showed only white and black, and looked as if the sitter had been exposed to direct sunlight, with no reflection whatever in the shaded parts. The general judgment of the public was naturally that these photographs were "no good," and the method was abandoned, as it did not take and therefor did not pay.

It was reserved for an accomplished artist to correct these defects and to arrange an artificial illumination which, by combining larger and smaller artificial lights and proper reflections, produced an illumination equal, if not superior, to that produced on the most favorable days by sunlight, and thus to obtain perfectly satisfactory results. This artist was Mr. Henry Van der Weyde, a son of the editor of this journal, who is now stirring up the city of London with his new method of taking photographs at night.

It appears to have become fashionable there at present to have one's picture taken after leaving the opera or a dinner late at night, and as the pictures are more satisfactory than those taken during the very inconvenient hours of the day, it promises to be a new era in this branch of business.

The New York *Times* contained recently a correspondence from London in which this was mentioned in a very awkward manner, which was not calculated to raise Mr. H. Van der Weyde in the estimation of those who possess information on the subject. Instead of stating what we have said above, it was asserted that he was attempting to bottle up sunlight, had made for this purpose a water lens, which broke and injured him, etc.; in short, he was represented as an ignoramus, who attempted absurd and impossible things, and ended by doing what had been done here several years ago,—taking photographs at night, and perhaps poor ones at that.

The method followed by Mr. H. Van der Weyde can of course be nothing but illumination by an artificial light or actinic

TRY PARLOR PASTE FOR MOUNTING PHOTOGRAPHS.

power, such as that produced by burning magnesium, hydro-oxygen light, electric light, sulphur burning on melted nitre, and other methods, which are available for the purpose, but to apply several of these lights simultaneously in such an artistic manner as to obtain results as satisfactory, if not more so, than can be obtained on the brightest days.

We need not say that this involves a revolution in the photographer's business; instead of waiting in the daytime for favorable periods, the photographer abandons the uncertainty of a London atmosphere and trusts to the results obtained by science and art to illuminate his sitters at midnight, independent of fogs or smoke, and he is sure of his results, and consequently (what is the main thing in all kinds of business) of his pay.

The success of such an enterprise in a city like London is undoubted, and the only reason why it will not be so soon generally introduced here is that our need for it is not so great. Still it was produced here several years ago. A few years ago we assisted in taking photographs at night by means of electric light and hydro-oxygen light, but, as above stated, they were so unsatisfactory that it offered no encouragement.—*Manufacturer and Builder*.

Try Scovill's importation of English Negative Glass.

OUR FOREIGN MAKEUP.

To Remove Silver Stains from Clothing.

This process is especially successful in removing spots from materials which have been several times washed. First prepare a saturated solution of chloride of copper, dip the spotted piece in the solution, and allow it to remain some minutes, or according to the character of the stain. Then rub the part with a crystal of hyposulphite of soda. When neutral chloride of copper is used the color of the stuff does not change. This process can be repeated.

The Japanese Puzzling Mirror.

This mirror is known only to very few persons. By it a remarkable phenomenon, and which is difficult to explain, may be shown. It may be described as follows: A very finely polished, quite thick, and even mirror of metal, having on the back arabesque ornaments in heavy relief work. These are not polished. By letting the rays of light fall upon the polished side of the mirror, and reflecting them upon a sheet of white paper, at a short distance, there appears the mirror picture with all of the relief ornaments upon its back, and which have a brighter lustre than the polished face of the mirror.

Dr. Splitter tries to explain it by the stronger vibration of the particles of the mass at these places. Dr. J. S.

Prevention of Blisters on Albumen Paper.

In No. 156 of the *Photographische Mittheilungen*, Messrs. Henvess & Weise, at Wernigerode, recommend as an absolutely reliable and very effective remedy against blisters on albumen paper an alcohol bath, in which the pictures are allowed to remain, after the gold bath, until they have a glassy appearance; the time required is from two to three minutes. They are then dipped into water, and treated in the usual manner. This alcohol bath can be used about twelve to fourteen days, and may be used in lamps for burning purposes; thus the cost is reduced materially.

To Remove Iron Spots from Clothing or other materials.

This question was answered as follows by Mr. Grüne, in the session of the Society for the Promotion of Photography.

The spots are colored blue with yellow prussiate of potash; wash with caustic soda, treat it with oxalic acid, afterwards washing well with water. Treated directly with oxalic acid, only fresh spots disappear.

Silvering of Glass.

BY PROF. DR. HIMLY.

Dissolve separately in definite proportions of distilled water, seventeen parts of nitrate of silver and twenty-eight parts of tartrate of potash and soda (the so-called Rochelle salt); mix the solutions. There is

S. P. C. SABLE PENCILS, THE BEST IN THE MARKET.

a precipitate of cheesy-looking tartrate of silver, which crystallizes in a few minutes; after settling the liquid is to be poured off and replaced three or four times by distilled water (shaking well each time), until the precipitate is thoroughly washed; add a small portion of distilled water, and cork the bottle well, setting it aside for use whenever required. Better kept in a dark place. When used the vial must be thoroughly shaken; a portion poured into a corked bottle, to this add strong ammonia, shaking all the while. To insure success the proportions of ammonia must be accurately observed. Should it be in excess, add small portions of the silver salt until there is always a small amount of the salt undissolved. In a few moments the commencement of the silvering process can be noticed on the inside of the glass itself, which can be slackened by adding a greater amount of distilled water to the fluid, according to the surface of glass to be silvered. The surplus of the silver salt, which turns black, settles at once to the bottom, after which the clear liquid is to be distributed over the surfaces of the glass. It acts at once, and in twenty minutes the glass is coated with a fine surface of silver.—*Poggendorff's Annalen.*

TAKING IMPRESSIONS OF NEGATIVES.

(After Braun.)

IN Braun's establishment (at Dornach) impressions of negatives are taken and kept between sheets of paper, mainly for the purpose of use in an inverted manner. This is often necessary for lichtdruck, and is also convenient for pigment prints, because good pictures are produced by simply transferring.

Impressions are taken in the following manner:

Clean the glass plate thoroughly, rub it over with stone alum. In no case have it albumenized, or an under coating to make it adhere more firmly. The negative is put on in the usual manner. After fixing and washing allow it to become half dry; pour upon it the following mixture: Gelatin, 100 parts; water, 400 parts, 10 to 15 parts glycerin, and 100 parts alcohol. In warm weather the plate dries in a few hours. When dried pour upon it one and a half per cent. plain collodion; dry again, and make a cut in the coating around the picture; it then detaches easily, or comes off itself.

In the copying-frame a greater pressure is necessary for these films than for glass negatives; Braun is using, therefore, layers of vulcanized caoutchouc, about the thickness of a finger.—*Photgr. Mittheil.*

WASHING OF PHOTOGRAPHIC SILVER PICTURES IN ZINC VESSELS.

BY F. W. GELDMACHER.

IT almost invariably happens that in new zinc vessels the pictures receive gray spots, which are nearly the same color as the zinc itself, and have the appearance of grease-spots, especially when the light shines through them. It is only those copies which come directly in contact with the metal which show these spots; those floating in the water, without touching, are not affected. The decomposing effect of metallic zinc upon the copies which still contain chloride of silver dissolved in hyposulphite of soda, is only seen where it comes in direct contact.

Copies which are entirely free of soda may be washed in such vessels with impunity, showing no spots at all. These spots frequently disappear after drying; occasionally, however, they remain, and the pictures are spoiled.

This can be prevented in two ways:

1st. By washing the copies in a vessel made of some metal substance, before placing them in the zinc vessel.

2d. By placing in the bottom a piece of paper, or oil cloth, so as to prevent the copies from touching the vessel.

When the surface of the zinc has become porous and roughened, and the metallic lustre has disappeared, these measures are no longer necessary, because these gray spots no longer appear.

For very large pictures (such as 2-1, 4-1 sheet and more) the use of zinc vessels is necessary, because those made of other materials are easily broken.

Large zinc vessels should be surrounded by wood, which is covered with asphaltum or shellac, in order to prevent warping.

SCOVILL'S POURING BOTTLE, 20 CENTS EACH.

A NEW GOLD SALT FOR PHOTOGRAPHY.

BY DR. J. SCHNAUSS.

UNTIL now there have been used only the single and double chloric salts of gold for toning. During the past winter Mr. Neumayer, student of chemistry from Munich, visited my establishment, and undertook under my directions the preparation of a gold bromide and a gold bromide of calcium, for the purposes of experimenting with these salts and their uses in photography.

Thin leaves of gold are readily dissolved in bromine water and in bromine gas. But a more rational and less disagreeable mode of preparation is by the action of hydrobromic acid, nitric acid, and aqua regia.

During the evaporation of the gold bromide, which has a dark appearance and smells strongly of bromine, great care is necessary owing to the fact that the gold bromide vaporizes easier than the chloride. Bromide of gold is difficult to crystallize. By the addition of an exact equivalent of bromide of calcium dissolved in water, and evaporated, small granite red crystals of double salts are obtained. $KBr + AuBr_3 + 5H_2O$ can be with difficulty dissolved in water; but a thin solution is of a deep red color, and effloresces in dry air.

I have tried these double salts, also the gold bromide, with several additions, as a toning bath. In its general effects on silver copies it is analogous to gold chloride combinations, except that in the same proportions it acts more energetically.

The addition of soda bicarbonate gives a blue-black tone, melted acetate of sodium a purple-colored tone.

For a lasting gold bath, in form of a *sel encausse*, these salts are recommended.

WE make the following extracts from Dr. Phipson's correspondence in the *Moniteur de la Photographie*, February 1st, 1877:

A silver bath, not liable to deterioration, is certainly a photographic desideratum, and, at the risk of being taxed with making an exaggerated assertion, I give the formula of a bath, the author of which, an esteemed London photographer, assures us that he has used for a long time without being obliged either to filter or discolor; and, to maintain its strength, it is only necessary to add from time to time a few small crystals of nitrate of silver and an equal quantity of crystals of nitrate of soda.

Here is the formula of the silver bath in question:

Nitrate of Silver,	2.50 grammes	(38 grains).
Nitrate of Soda,	1.25 "	(19 ").
Ammonia, ...	2 drops.	
Wood Spirit, .	7½ cent. cubes.	(2 fl. drachms).
Water, . .	30 "	(8 ").

The paper is floated on this bath for three or four minutes. As soon as the operation is finished the bath is poured into a bottle, which is then corked.

THE dry coffee process of which Col. Baratti was one of the oldest advocates, is still considered one of the best of the published processes. The late Mr. De Constant often used it with the greatest success; and recently a correspondent in Switzerland has sent to the *Photographic News* some excellent results. Moreover, Mr. Haatmann, President of the Photographic Society of Amsterdam, and Mr. Victor Angerer, a well-known photographer in Vienna, are unanimous in declaring the efficacy of the process in question. Mr. Haatmann, who is an amateur photographer, has a great predilection for dry plates. He has tried tannin, tea, tobacco, morphia, and in general all the substances recommended, but nothing appears to him so clean and satisfactory as the coating of coffee. The plates are prepared, moreover, in the most simple manner. The solution of coffee is made thus:

Boiling Water, .	100 c.c.	(3½ fl. ozs.)
Pure Java Coffee (roasted), . .	5 grammes.	(77 grains.)
White Sugar dissolved in a little water,	2.50 "	(38 grains.)

This infusion, after cooling, is poured on the sensitized collodion coating, and the coating is then allowed to dry.

CHLORIDE OF PALLADIUM PROCESS.*

MR. DUBOIS-CAPLAIN has communicated to us the following letter, which will be read with interest.

DEAR SIR: I have made use of chloride

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* From the Moniteur de la Photographie.

PARYS' SPECIAL COTTON FOR DRY PLATES.

of palladium instead of chloride of gold to strengthen transparencies after fixing.

It is necessary to eliminate with great care every trace of the fixing and developing liquids, which would precipitate the palladium either as a metal or a sulphate, and in that case the entire solution would be lost.

The great advantage of the use of the chloride of palladium is that, differently from what takes place with the chloride of gold, it may remain upon the pellicle as long as is desirable, without fear of injuring the half-tones; on the contrary, it acts as a *re-developer*, strengthening the image and imparting to it a rich black tone.

The use of chloride of palladium was first made known in the *British Journal of Photography*, but I have forgotten by whom.

The solution is composed of one part of chloride of palladium dissolved in twenty parts of distilled water.

Your price of one franc and a half a gramme (28 cents for 15 grains) is considerably less than what I have paid here, and will certainly induce operators to make use of this salt.

ELLERBECK.

Spencer's Improved Centennial Head Rest. Plain rods.

Impression of Form and Expression.

BY WM. F. OSLER.

WE may smile with seeming benignity at such remarks as, "You have made my nose so large," or "my eyes too small," or "my mouth crooked," or at sweet sixteen exclaiming, "You have made me look perfectly horrid," or when your own dear old pastor tells you that you have made him look fifteen years older. But still the educated public will appreciate one who is informed by study and intuition. The camera is not perfection, and we must carefully avoid as far as possible a distorted nose, or that the eyes are affected in any manner by a strong light. Quickly analyze the face, marking the deviations from what is refined, or ignoble, selecting the better vein, as each side or vein is decidedly different in many formations, the expression remaining entirely with the subject, upon whom the operator may have some influence by ingenious observations and good address; if he has not these abilities the least said is for the best; his ideas of composition, effect of light, grace of form, and harmony of surroundings must be used as if they were all at his fingers' ends, to be vigorously exercised at a moment's notice. To acquire these accomplishments he must study art.

"Fortunate is he who at an early age knows what art is," may be considered a wise saying of Goethe; but in pursuing the study of art we find at the very threshold, especially in regard to painting, a diversity of opinion as to the authority of art that has as often confounded artists and connoisseurs of art as much as the search for truth has the doctors of theology, medicine, or political economy. Our statesmen solved the great problem that eight votes will beat seven, and probably the same rule of action might hold good in determining the standard of true art. We are conscious of what we consider artistic, but are anxious for a rule, system, or basis to judge from, knowing that we are continually educating ourselves to a more refined and higher appreciation of art imperceptibly. What should make us conscious or demonstrate to our minds what constitutes the marking of nobleness, endurance, beauty, and other perfections in the human face and form, have been settled so far as the judgment of the enlightened world can apply from the present time back to the fourteenth century, by adopting the ruined classic marbles, the creation of artists who flourished from Phidias's time, 400 B.C., to the beginning of the Christian era. The art of ancient Greece has been to succeeding ages the inspiring source of all excellency in sculpture and architecture. Their habits of living developed their bodies into manly vigor, and their becoming dress gave to the forms of their gods and goddesses an august grandeur and grace founded upon nature, but sublimated by the genius of the sculptor, their existing works though somewhat mutilated are the accepted authority that there have been no works of art superior. It is well that this is so, that we may have some received foundation to educate, reason, and work upon. The

Apollo Belvidere and Venus de Medici are the divine forms and graces, the landmarks where all may split their differences and subscribe to those acknowledged formations that we must study, imitate, and accept as a foregone conclusion that no heroism or manly beauty can exist but what has some similarity to these gods of the ideal; but in all our heroines or humanity's greater lords we have formed an imaginary ideal only to be fearfully disappointed on beholding the original.

Gilbert Stuart informs us that the nose is the key to the human face; other authorities that the eyes display the greater amount of expression; Sully, that the mouth is indicative of the largest amount of character. We look on Stuart's Washington with all due reverence, and notice a large mouth surrounded by full muscles, with every indication of broad common sense, refined feeling, and reserve power, the nose defining a strong animal physique, heroic in form, but heavy, massive, and homely, his eyes full of dignity and quiet determination, a face full of character, but as far from classic in appearance as Socrates's pug nose.

Napoleon's brow and nose displayed all the refined heroism of classic art, but his handsome eyes and finely formed mouth indicated pride and selfishness.

The expression or impressions that we become conscious of and that convey the character of an individual face are viewed from many standpoints. It is a consciousness we receive by instinct alone and reason on such impressions, but still instinctively judge and receive a lasting impression; but to find a rule to guide all in forming the same opinion is simply impossible. One may insist on having what he may call character in the face, but what one may term character another may consider coarseness and want of refinement, and they in turn may see no beauty but meekness or childishness represented, and here is a question of inborn affinity. We are not organized alike; my impressions will seem wrong to you if I state them honestly, and so would yours to me. Rude and simple persons express this dissent with vehemence and become personal, hostile; intellectual men mark with curious interest the point of divergence and calmly try to account for it. Each face may tell its own story, but not always the whole truth; most of its character and history is plainly stamped to be read by those who are acute enough to comprehend.

* * *

Newton's Emulsion is made for the trade solely by the Scovill Manufacturing Company. For sale by all Dealers.

Instantaneous Photography.

A SERIES of articles have recently appeared in the *Bulletin de la Société Française*, from the pen of M. Sahler, on the above subject. M. Sahler seems to have made a profound study, both theoretically and practically, of the subject he has taken up, and we now place before our readers, by way of summary, the formulæ recommended by that gentleman to secure pictures with rapid exposures.

Accelerating Liquid.—Into a bottle capable of holding one-tenth of a litre are put sixty cub. cents. of alcohol and one gramme of iodide of cadmium; then drop by drop is added sufficient ammonia until the last drop brings about the slightest turbidity. The clear liquid is poured off, eight cub. cents. of rectified alcohol are added, together with five drops of a saturated solution of nitrate of ammonia, and the liquid is then stirred, while drop by drop so much glacial acetic acid is put in to render the liquid clear again, only leaving at the bottom of the vessel a small precipitate of hydrate of cadmium.

Collodion.—Five grammes of collodion pyroxylin are weighed; this is put into a wide-mouthed bottle and well corked, where it remains a month. The pyroxylin then begins to decompose and gives off acid vapors, and as soon as these are apparent by the smell, the product may be employed.

A litre bottle is taken, and into it are poured three hundred cub. cents. of alcohol; in this are dissolved nine grammes of iodide of cadmium, and then the five grammes of decomposed pyroxylin, together with another five of undecomposed cotton, are added. Stirring the while, there is added by degrees ether (of 62°) enough to dissolve

SWASEY'S SCENIC BACKGROUNDS. TRY THEM.

the pyroxylin. Finally, the bottle is filled with a mixture of alcohol and ether.

The collodion is tested by pouring some of it upon a glass plate. If the film is not stout enough, a little pyroxylin is added; if it is ropy, more alcohol should be added. Then, in the open air (to prevent one breathing the injurious fumes), thirty drops of bromine are permitted to fall into the bottle.

The decomposition products of the pyroxylin oxidize the alcohol and change it into aldehyde; the iodine displaced by the bromine combines with the nitrogenous oxides, when a similar noise will be heard to that made by a hot iron being thrust into water. Iodate of chromium is formed, which subsequently combines with ammonia.

The accelerating liquid is shaken up, allowed to remain for five minutes, so that any coarse particles may sink to the bottom, and then three-fourths of the contents of the bottle is poured into the collodion. If the latter becomes turbid, it is filtered, and then two drops of ammonia are added.

If the collodion does not become colorless within ten days, then one or two drops of ammonia are added. It does not matter if it is a little turbid. It is put into long narrow bottles and permitted to stand until it is clear. It should be of a light-yellow color; if colorless, it is tinted before use every time with a few drops of tincture of iodine. It will keep good a very long time.

If the pyroxylin has been too much decomposed, the collodion will not adhere to the glass; a little ordinary iodized collodion is then added to it. When the collodion grows very old its sensitiveness may be materially increased by the addition of one or two drops of the undermentioned reducing fluid. In fifty grammes of alcohol are poured six drops of aldehyde and three drops of ammonia. This solution must remain some days before it is used. Still more sensitive becomes the collodion by the addition of one or two drops of an extra accelerating fluid, composed as follows: Into fifty grammes of alcohol are put eight drops of aldehyde and three decigrammes of caustic potash; after standing a fortnight the fluid becomes of a dark-brown color, and ready for use. The collodion is allowed to remain for some hours, and before use the upper portion is poured off.

The so-called Mann pyroxylin does not yield any acid fumes on keeping. When this is mixed, there should be added, before the iodide of cadmium is employed, eight drops of the extra-accelerating fluid to the alcohol, and no ammonia afterwards.

Dry Collodion.—The collodion above described requires no covering or preservative. Its sensitiveness is improved by a solution of fifteen centigrammes of resin for every hundred cub. centimetres of collodion. The maximum sensitiveness of this collodion is, however, reached by employing with it a solution of tannin.

The developer and mode of treating the negative will be given hereafter.—*News.*

Scovill's Border Negatives, 8 x 10, only 50 cents.

THE PLATINOTYPE.

BY W. B. BATHO.

The number of processes for producing permanent photographs afford sufficient variety to suit every taste, and to meet most demands. This is one of those methods for realizing the desideratum of a permanent photograph which, while being a most elegant adaptation of the laws of chemical affinity, seems not to attract the interest it deserves.

The platinotype process of Mr. W. Willis has been sent forth as a process giving a result of special value in certain departments of our art, and most decidedly the results are unique. The artist can have a photograph on any special paper with the tooth left intact for his brush-work, the shades consisting of a deposit of platinum black, a substance in itself as stable as any we possess.

It is more than likely that photographers will look with some amount of suspicion on the claims made in behalf of the platinotype for permanency, when it is observed that nitrate of silver and hyposulphite of soda are generally employed in the process. Yet with equal justice might the carbon process be decried, seeing that it is possible to use fugitive colors in the making of tissue. Wherein the fading of a silver print consists

F. W. DEVOE & CO.'S TUBE OIL COLORS.

a cautious chemist would hesitate in positively affirming. The usual method of picking up the symbols at random, and showing therefrom a decomposition of some sort, serves not to make matters clear. It has yet to be shown that because hypo and silver are used in the platinotype, it must needs fade.

The reactions involved in the process under discussion are very beautiful, and cannot fail to arouse more than passing interest, and is a capital example between a haphazard invention and one evidently the result of patient thought.

The rationale of the process is as follows: *Ferrous* oxalate, while being a good reducer of such detals as platinum, iridium, or gold, is insoluble in water, and hence there is at first some difficulty in bringing them into such a state as favors decomposition. However, a solution of the neutral oxalate of potassium is a ready solvent of the ferrous salt, making an excellent "developer" when the salts of platinum, etc., are brought in contact therewith. *Ferric* oxalate is readily soluble in water; it also is reduced by the action of light to the insoluble *ferrous* oxalate, so if paper be coated with *ferric* oxalate solution, and exposed to the light, those impressed portions will have the *ferric* salt reduced to the *ferrous* in proportion to the light action, and be in the condition for reducing platinum or other metals upon such portions, to form a picture.

Such are the reactions involved in the platinotype. Its practice is as follows: A starch-sized paper is floated on a six or eight-grain nitrate of silver solution. Floating is not necessary. A little of the silver solution poured on the sheet of paper, and spread with a pad of cotton-wool, I have found equally efficacious. This is allowed to dry thoroughly—indeed quite dry—before a fire, as I find this proceeding keeps the print on the surface. The silvered sheet is now placed on a plate of glass, and clipped thereto with American clips. A small quantity of a mixed solution of chloro-platinite of potassium and ferric oxalate is poured on the sheet, and spread with a pad of cotton-wool, and subsequently levelled with a squeegee made of flannel wrapped round a glass rod; the sheet is now dried in the dark, and is ready for printing; it has a pale primrose color in daylight, but rapidly darkens, being much more sensitive than silver paper. It need scarcely be added, the foregoing operations must be performed in the dark-room. The printing is accomplished in the usual manner. Experience will teach when the picture is exposed sufficiently, by an inspection of the print, a faint outline only being seen. The impressed paper is taken out of the printing-frame, and floated on a hot solution of potassic oxalate, when the picture flashes out instantaneously; it is now washed in a weak solution of oxalic acid, to remove the iron salts, still in the paper, then washed in water, and toned in a sulphocyanide bath; again washed, and fixed in a strong hypo solution, a slight washing finishing the operations.

The permanency of the picture is assured by the entire absence of silver in the finished results. I have not, by any test I am acquainted with, found the presence of the merest trace of silver left in the paper. I believe the patentee guarantees this, yet, withal, there will be a lurking doubt in the minds of most photographers in any method of printing wherein silver and hypo are brought into practice. This, however, must not be allowed to tell too strongly against the platinotype method of printing, seeing that other solvents for the silver compounds can be employed, and are named by the patentee. Ammonia forms one of these, it taking the place of hypo. This I do know, that there are silver pictures fixed with ammonia which, in the course of years, have not shown the least symptom of fading. Hence it may be safely predicted that a platinotype print, when rightly produced, will have as long an existence as a print made by any other method extant. This is my opinion, after all, and I may add, in the words of the Koran, "Wherefore let him who will, believe; and let him who will, be incredulous."—*Exchange.*

Scovill's Pocket Lilliputian Stove. 75 cents.

Lewis & Holt's Collodion in Scovill's Pouring-Bottles.

PARYS' NEGATIVE GUN-COTTON.

Morrison's New Rapid Copying Lens is unequalled.

THINGS WELL SAID.

"I NEVER see a photographer with his 'dry' apparatus about him, exposing a plate here and another there, without my envy of his independence being greatly qualified by my pity for the trouble that he has had overnight in preparing all those plates; and who can say how they may 'come out,' whether it will not prove to be 'love's labor lost,' and whether he will get another chance of those subjects?

"Yet, on the other hand, I never see a photographic cab or brougham by the wayside, with the driver asleep, and the horse with its nosebag, without pitying the unfortunate worker within. Hampered with so much unnecessary weight and space, 'a world too wide' for him, unable to leave the dusty highway, or to seek a 'cool, sequestered spot,' where he can work in privacy, he reminds me of nothing so much as of a soldier-crab in an inconvenient-shaped shell much too large for him! And the crab has the advantage of not being compelled to move about!"—JOHN MCANDREW.

"It sometimes happens that an invention or improvement is developed to a certain extent and then remains in abeyance for a series of years. It was so with asphalt. Some forty years ago asphalt was a novelty full of promise, and paving stones were at a discount. But asphalt went out of fashion until the Val de Travers and other companies revived its popularity over the world. It was the same with velocipedes. 'When George IV was king' the velocipede was 'the rage;' and there are those who remember young Faraday astride one, driving up Hempstead Hill. But the velocipede disappeared for a generation, when it revived as the bicycle. And thus, I dare say, it will be with aluminum and magnesium. They will rest where they are for one or two decades, when some genius will take them in hand and introduce them on a large scale to commerce."—WILLIAM WHITE.

"A great deal has been said and written about the suitability of such and such films for enlarging purposes, and, although I consider it most desirable that fineness of texture under a high magnifying power should be aimed at, I am inclined to think that much less depends on the texture of the film than has generally been supposed. In all films I have been able to examine under the microscope I have found the want of definition, when subjected to a high magnifying power, of the finest and sharpest straight lines attainable in a negative, a much more serious drawback than any remissness of texture in the body of the film. There is a softening and rounding off at the edges of what would be supposed to be sharply-defined objects both in wet and dry films, so far as I have been able to examine, including the finest albumen. Whether or not this is a chemical or optical defect I am not prepared to say; but there is no doubt that this 'rainbowing,' so to speak, becomes glaringly apparent when a negative is enlarged up to eight or ten diameters, and always stamps such a production with the stigma of being a copy; and until we can photograph fine lines which will bear a high magnifying power without any sensible loss of definition, enlarged negatives can never compete in crispness and brilliancy with large and well-manipulated direct ones."—J. POLLITT.

"If ever photography is to take its place permanently as a branch of the fine arts, mechanical, hard pictures must become matters of history, like modern pre-Raphaelism, which expired on the altar of its own absurdity. Photographic landscapes without clouds, or a miserable substitute by attempting to paint them on the backs of negatives, ought to be a thing of the past, and not admitted to art exhibitions. To photograph clouds with either wet or dry plates is so simple and easy that any one may accomplish it. It is in combining by double printing that a knowledge of art is indispensable, so that the clouds and landscape may appear as if both had been taken together. A balance of effect should prevail throughout the composition when completed."—REUBEN MITCHELL.

"Peerless" Portrait Lenses are the best.

BIGELOW'S CLOUD NEGATIVES.

PHOTO-LITHOGRAPHIC PAPER

For Transferring Pictures in Line or Stipple, on Stone or Metal.*

BY PROF. J. HUSNIK, AT PRAGUE.

The ordinary photo-lithographic paper, which is used for reproducing pictures in line or stipple, is prepared either from albumen or gelatin.

Each variety requires separate treatment, and each has its advantages and disadvantages. Owing to the latter, they are seldom used in practical printing, being confined principally to experimental work.

These papers are sensitized with chrome salts, exposed under a negative; then blackened with a fat paint thinned with turpentine, and after drying placed in water. The paper will be thoroughly soaked by the water, and the paint with the coating (when consisting of albumen) can be removed from the unsensitized plates by means of a sponge, or the coating (when of gelatin) will remain upon the paper; the paint alone can be removed by rubbing. The chief advantage of the albumen method consists in the ease and rapidity with which the picture is developed. Its disadvantage being, however, that the preparation of the albumen paper requires much time and trouble, and that only a few sheets can be prepared at a time, about enough for each day's use.

The white of eggs should be beaten until it resembles snow; allow it to stand awhile, and add the chrome salts. Frequently it happens that we have to throw away the solution after the preparation of a few sheets, because neither the paper nor solution will adhere. There is another disadvantage which this method possesses, namely, that in developing the picture the surface of the soaked paper is easily rubbed off, thus spoiling the picture.

The gelatin papers can be prepared in great quantities, because the gelatin may be applied separately, and the prepared sheets can be sensitized in the chrome salt bath, which is capable of holding itself. This advantage of the gelatin process is greatly counteracted by the fact that the papers allow of no rapid and easy development of the picture, requiring several kinds of skilled treatment, especially the use of a paint roller to remove the superfluous paint. Whenever excellent results are produced, it is only by very skilful treatment. Whoever has tried to roll out a sheet of paper will appreciate this difficulty. In fact, skilful hands are requisite to discover the places where the color is to be removed or the shades require to be more or less opened. The development must be quickly accomplished, and only by means of a sponge. This is a simple process, and should enable amateurs, even when they understand nothing of drawing, to execute the operation skilfully.

Sometimes the picture is spoiled by an oily tone of the whites, which is hard to remove.

The photo-lithographic paper which I prepare embodies all of the advantages and none of the disadvantages of these processes. There is nothing necessary but a constant chrome salt bath, which when required is to be carefully poured from the bottle without filtration, in which may be immersed the number of sheets required for each day's use, or the operation may be repeated several times in the day, as the drying of the paper requires only one and a half hours. The development of the picture is a fast and sure process, and the stroke and graining manner appears excellently. The reprinting is sure; the papers are not crushed, and there is no tone shown in the whites.

The advantages of this paper are security to work, especially such as those fine maps, reduced to one-third, which are executed by the Imperial Printing Office for the technical military committee and the topographical department of another imperial establishment at Vienna.—*Photogr. Notizen.*

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* This paper is for sale by Dr. C. Schleussner, at Frankfurt a. M.

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MATTERS OF THE MONTH.

Mr. William H. Tilford, of St. Louis, one of the pioneer stockdealers of the West, is now interested in the St. Louis Compressed Yeast Company, being one of its stockholders and managers. This company makes superior yeast, the reputation of

SCOVILL'S LILLIPUTIAN POCKET STOVE, Price 75 cents.

which is not second to any, even that of Gaff, Fleischmann & Co., the proprietors of the Vienna Bakery, which became so noted for its beautiful bread during the Centennial Exhibition in Philadelphia.

Spencer's Patented Centennial Head Rests, of the improved pattern, are the very acme of perfection.

Price, plain rods, . .	$14 00
" nickel " . .	17 00

Ask your dealer for them.

A History and Handbook of Photography. Muslin, $2.50. Translated from the French of Gaston Tissandier. Edited by J. Thomson, F.R.G.S. New York City: Scovill Manufacturing Company, 419 to 421 Broome Street.

M. Tissandier is the editor of our excellent contemporary *La Nature*, and one of the best French writers on popular scientific topics. In the present volume he has combined a history and a useful manual of the photographic art, the latter of which is excellently adapted for the purposes of the amateur. For general perusal, the work can be especially commended, as it gives in pleasant, readable style, a capital account not only of photography but of many of the new processes for the mechanical reproduction of pictures, dependent on photographic manipulation. The subjects of photo-micrography and astronomical photography are fully discussed. The illustrations are numerous and remarkably good; and an appendix is added, giving many valuable practical recipes.—*Scientific American.*

Important Invention.—The difficulty of boiling down the silver bath, or rather the evaporation of the solution, is obviated by the use of a simple and inexpensive apparatus, Scovill's Photographers' and Chemists' Evaporator (No. 444). It will be found invaluable for general use in the laboratory, and consists of an alcohol stove with duplex cover for giving different size flame; and a round iron stand having three legs, with a circular band having a corrugated edge and a wove wire fire screen, through which the flame will not pass while the evaporating dish is placed over it, thus preventing the dish from being cracked by the direct action of the flame. It is better than the sand- or water-bath as the heat is instantaneous. It may be left without watching, as it cannot boil over, the highest temperature attained being but 200° Fahr. If you wish to boil anything, all that is necessary is to take out the flame screen. Price, one dollar. Sent per mail on receipt of price.

The S. P. C. Chromo-Photography Materials are very popular, and deservedly so with photographers and other parties who have used them in making chromo-photographs. The colors are of the very best make,—F. W. Devoe & Co.'s, New York, while the Transparent Compound on which depends the successful production and *permanency* of the picture, is unlike any other substance used for this purpose, being a *secret* preparation, the result of careful study and experiment. All dealers have these materials. Ask for the S. P. C. brand, and don't be put off with any other.

Newton's Emulsion is having a great sale, and many photographers write us that they are highly gratified with their results, indoors and out, and think seriously of giving up their silver baths altogether. Some few have been "fogged" a little at first, but a line from Mr. Newton on *manipulation* has set them straight.

Mr. G. D. Wakely, late of Kansas City, Mo., where he successfully carried on the photographic stock business for many years, has gone to California, and taken up a new *line*, as will appear from the following, which we clip from the Los Angeles *Herald:*

"Elsewhere in this morning's issue of the *Herald* will be found the advertisement of Messrs. Campbell & Wakely, livery stable keepers, at No. 47 Aliso Street. These gentlemen have a large stock of reliable and fast driving horses, elegant vehicles of all descriptions, besides a number of perfectly safe and gentle animals suitable for ladies' use, either riding or driving. Their accommodations for boarding horses are thorough in every particular, and terms most reasonable. Give them a call."

Mr. Henry D. Marks, the *live* stock-dealer of Rochester, N. Y., is doing a first-rate business, notwithstanding the unusual

WINSOR & NEWTON'S TUBE OIL COLORS.

dulness of the times. Mr. J. Robert Moore, of Trenton Falls, N. Y., one of Mr. Marks's customers, writes him that the Model Stereo box (American Optical Company's make) is the lightest and best that he ever saw.

Messrs. Long & Smith, Quincy, Illinois, give evidence, by their orders, that they are selling a great many photographic goods. Amongst their recent purchases was a 20 x 24 American Optical Company's portrait box, which they sent to Mr. Frank F. Currier, Omaha, Neb., who in his appreciation of its merits telegraphs us: "Received 20 x 24 box from Long & Smith; finest I ever saw."

Not only do the grateful acknowledgments of discriminating artists reach us from all parts of our own country and Europe, respecting the incomparable merits of the American Optical Company's apparatus, but Africa adds her quota. We quote from a recent letter received from a Parisian photographer of high standing in his profession, in his own city, who has a flourishing establishment in Algeria, French Africa: "I have been very much satisfied with the last sending of your apparatus, and above all the camera is a marvel of beauty, and I recommend your apparatus to all photographers of my acquaintance as the best made in the world."

Messrs. A. M. Collins, Son & Co., the oldest established manufacturers of photographic card stock, have sent us samples of their newest styles of mounts, No. 49, in white, pink, pearl, primrose, and green, with enamelled backs beautifully figured, and plain faces. They are all round-cornered; card size, $5 50 per thousand; cabinet size, $13.50 per thousand. Like all other goods made by this enterprising house, these are very neat and tasteful. They have just issued a reduced price list, to be had of the Scovill Manufacturing Company, who keep a full line of their card stock on hand.

Swasey's Scenic Backgrounds are destined to supersede the ordinary painted backgrounds as soon as the photographers try them. The artist who expends a few dollars for the Swasey backgrounds, may produce a great variety of exterior and interior effects in card, cabinet, and 8 x 10 sizes, while his gallery need be supplied with but a single plain distemper ground. The negatives are all made *plain*, and Swasey's negative background, which is prepared on a thin film, is simply laid in the printing-frame between the negative and the paper, producing scenic effects in any desired variety, fully equal in *relief* effect to that which results from the best painted gallery background. For sale by all dealers.

Price, card size, . . .	$0 75
" cabinet size, . . .	1 40
" 8 x 10 size, . . .	2 25

Ferrotypers who make the best work say that Trask's ferrotype collodion gives them the best results. It gives a softness and delicacy of tone and definition not to be had in the use of other collodion. All stockdealers keep it.

Try Parlor Paste for Mounting Photographs.

Prizes Offered by the Vienna Photographic Society.*

The Vienna Photographic Society offers the following prizes for the solution of various problems connected with photography:

a. Voigtlander Medals.

1. A gold medal worth 140 ducats for a method of increasing the sensitiveness of wet plates.
2. A gold medal worth 140 ducats for a certain and rapid dry process of superior excellence.
3. A gold medal of 40 ducats for a thorough research into the asphalts.
4. A silver medal for a collection of natural history studies.
5. A silver medal for a collection of instantaneous pictures.
6. A silver medal for a collection of lantern transparencies, for illustrating science, art, or technical matters.
7. Medals in gold (of a value from 40 to 100 ducats), silver, and bronze, for scientific research, inventions, or improvements, which are communicated to the society or to its organs.

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* From Photographic News.

PHENIX COLLODION, IN 8 oz. DREG BOTTLE, only 50 cts.

b. Society Medals.

1. Gold medal of 140 ducats for the production of type blocks having half-tones.

2. A gold medal of 140 ducats for a critical study of the reactions of chrome acids and their salts upon albuminates, albuminoids, carbon hydrates, and resins, with particular reference to the different heliographic processes.

3. A silver medal for *genre* pictures.

4. A silver medal for carbon prints produced in Austro-Hungary.

5. A silver medal for a collection of monuments.

6. A silver medal for a collection of ethnological studies.

7. A silver medal for a collection of anthropological studies.

Competitors must qualify by becoming members of the society. Further particulars may be obtained by addressing the President, Dr. Hornig, Vienna III, Hauptstrasse 9.

MOUNTING PHOTOGRAPHS.

BY WALTER B. WOODBURY.

Most amateurs, when mounting their photographs—say of the favorite cabinet form—have, no doubt, been astonished to find that, although all the pictures had been cut with the same shape, leaving perhaps a margin of one-eighth of an inch at the top and sides, some of the prints nearly covered up the card in the length, while others had the opposite fault.

The subject of expansion of the paper in one direction has lately been brought forward, as tending to give two different ideas of the same portrait; but the slight difference can barely be perceptible except to a very critical observer.

When it is a question of mounting a number of photographs to a shade within a line, then the matter becomes serious, and it is an absolute necessity to have two different shapes, one for those prints cut across the paper and the other for those cut lengthwise. The former will have to be (for cabinet size) nearly one-sixteenth of an inch shorter, and the latter one-sixteenth longer.

It is best to mark the paper cut across the sheet before printing, so as to know which shape to use; but, in case this has been neglected, the two classes of prints may be easily separated by slightly warming them, the cross prints forming themselves into a short roll, and the others into a long one. They can then each be cut with their own shape, and when mounted will be found to occupy the same position on the mount.

In using an alcoholic solution of glue, where very little water is present, the stretching of the paper is reduced to its minimum. This is best made as follows: Soak common gelatin (glue will answer) in as little water as will just dissolve it. While hot pour in gradually methylated spirit, stirring all the time until the spirit is in about the proportion of three to one of the gelatinous solutions. A species of precipitation takes place, which, however, redissolves on well stirring. A little glycerin or sugar can then be added.

Great care is necessary in mounting with this material, as if once the print is laid on the mount it is almost impossible to remove it.—*Br. Jour*.

Stephens's Patent Parallel Vise, for Frame Makers.

TOPICS OF THE TIMES.

The *Mittheilungen* has received news of the expedition to Morocco which started from Germany about the end of April. It has arrived safely at Tangiers, where Herr Remelé has been occupied taking views and groups of the natives, utilizing the halt made before setting out for the interior.

It has long been supposed that the colors of the butterfly's wings suffer from exposure to concentrated light, and, according to the *Institut*, M. Capronnier has recently been making experiments with a view to ascertaining what sort of light bleaches most strongly. The result arrived at is that, as in photography, after the white light the blue light is the most actinic.

Dr. Vogel gives a few details with regard to the sensitiveness to light of purpurin, which has been so much talked of recently in connection with the sight purpurin of

PHENIX VARNISH IN 8 oz. DREG BOTTLE, only 50 cts.

the eye and the recent experiments of Kuhne with the eyes of oxen, rabbits, etc. Purpurin—a dyestuff found along with alizarin in madder—gives a solution which, in the presence of a little alkali, is extraordinarily sensitive to light. Other solutions of dyestuffs themselves actually more sensitive to light—such as fuchsin, alcanna red, and santalin—do not lose their color after several days' exposure to light. In clear weather a wine-red colored solution of purpurin becomes colorless in about ten minutes, and even by lamp-light, at a distance of twenty centimetres from the lamp, in about half an hour it will be distinctly apparent that the color has begun to fade. Dr. Vogel's former experiments show that in this bleaching its power of absorbing yellow rays plays an important part. An alkaline solution of carmine is also sensitive to light in the same way, though not to the same extent, as the alkaline purpurin solution. Schunk and Römer found that alkaline purpurin also lost its color in the dark, and that when deprived of air it did not bleach either in the light or the dark. It follows from their experiments that oxygen is necessary to the bleaching of purpurin. Any one can, however, convince himself by a simple experiment that purpurin is much more readily bleached in the light than in the dark.

Mix with ten cubic centimetres of distilled water about ten drops of a saturated tincture of purpurin and one drop of ammonia; divide the beautiful rose-colored fluid so obtained into two equal parts, and put each part into a test-tube. Cover one of the test-tubes with black paper, and place both in the window. After the lapse of ten minutes compare the two glasses, when, even if there be only daylight without sunlight, the liquid in the uncovered one will be found to be a good deal bleached, while that in the protected tube will scarcely be changed at the end of a couple of hours.

THIS month's number of the *Mittheilungen* contains Herr Goltzch's third article on the advantages of reviving stereoscopic pictures, this one being devoted to stereoscopic portraits. The same number also contains a statistical account of the number of photographic establishments in Germany—estimated at a little over three thousand—and of the quantities of chemicals they consume, an average of three pounds per establishment being allowed as the consumption of nitrate of silver, and its cost being estimated at about £27,000 sterling. Of this large quantity it is supposed that about sixty per cent., or the value of £16,400, is annually lost in one form or another as waste. The value of the gold salts used is estimated at a quarter or, at most, a third of the sum allowed for silver, that is, at about £9000. Owing to the quantities of albumenized paper exported through dealers, and of French mounts imported, it has been found almost impossible to assign figures to these last two items. The number of frames made in Berlin—of which, however, only a portion is used in Germany—is stated at an annual product representing £7500.

IN the *Monatsblätter* Herr Geldmacher has an article on the causes of the cracking of negative plates in the solar camera. Although he is aware that every photographer is acquainted with the construction of a solar camera, he thinks it as well, owing to the unusually large dimensions of his apparatus, to commence by giving a short account of it, which may here be thus briefly summarized: It is placed with the reflector at the northeast, and the easel with the printing-frame at the southwest. In this way the sun lights the reflector almost the whole day. The front of the outer chamber is only high enough to shelter the combination lens, and rises rapidly towards the back to a height of four metres, and the reflectors being placed four metres from the lens, this arrangement allows the light to fall almost perpendicularly upon the mirror. The latter, being movable, follows the sun's apparent movement, while no direct sunlight falls upon the lens itself. The combination lens is plano-convex, and has the convex side turned towards the reflector. It has a diameter of one metre, and a curve of about twenty centimetres; the focus is about two metres. At the side of the lens is the regulator by which the movement of the reflector, following the sun, is controlled. Between the condenser and its focussing-point is an iron camera, in which a dark slide, holding the negative to be enlarged,

SCOVILL'S BORDER NEGAVIVES, 8 x 10, only 50 cents.

is moved backwards and forwards by means of an endless screw. At the end of the camera an objective is placed so that the focussing-point of the condenser falls exactly between the lenses. The whole length of the chamber, exclusive of the distance between the condenser and the reflector, is ten metres.

The breaking of the negative sometimes happens because it has not the shape required for enlarging, or because it is too small; and in order to get a much enlarged copy it becomes necessary to use a very small objective, and then the focus-point is too near the plate. The principal cause of breakage occurs when the whole surface of the negative is not lighted. Within the circle of light the plate is strongly heated, while the edges remain cold and almost invariably crack. To prevent this the unlighted part should be cut away with a diamond. This should be done also when one wishes to enlarge a single figure from a group, otherwise the plate is likely to crack. Another cause of cracking is the too great density of the plate. It is sometimes impossible for the most intense light to act through the whites; in this case it is advisable to make a small, less dense copy, and enlarge from that.

Besides the breaking of the negative, Herr Geldmacher goes on to speak of other disadvantages of heating the negative too strongly by means of the condenser. When a varnished negative is overheated, the varnish burns, and becomes red, brown, and even black, being then perfectly useless; nor can this burnt varnish be removed by washing with alcohol in the usual way. He therefore recommends that unvarnished negatives be used. He is also of opinion that its yellow color allows the varnish to absorb part of the light and to lengthen the exposure. All these evils he has, however, been able to overcome by care, by certain precautions, and by the help of his excellent enlarging apparatus.—*British Journal of Photography.*

Mr. Peter Parys informs us that we were in error when we stated on page 135 of our last number that the best gun-cotton gives no residue when dissolved. Mr. Parys makes a special effort to get a cotton that will get a slight residue, claiming that such a cotton is better than that which is made at a temperature to prevent residue occurring.

We have heard of a carbon worker who demonstrated before an audience the indestructible nature of carbon as compared with silver prints, by immersing a print by each in a bath of strong acid. The silver print soon disappeared while the carbon remained intact. This we think was hardly a fair test, as the same result might have been shown an audience by submitting a silver dollar and a piece of charcoal to the same acid; the dollar would have disappeared while the charcoal remained; and yet, on account of the general knowledge on the subject of values, no one would be made to believe that the piece of charcoal was worth more than the silver. Just as reasonable an experiment might be made to illustrate the superiority of silver over carbon by placing both the silver and charcoal in a moderate fire. The charcoal would be consumed while the silver would remain uninjured.

A Refined Gun-cotton.—There is a great diversity of opinion as to the qualities of the different brands of gun-cotton in the market. Some photographers adhere strictly to the use of one kind, while others are emphatic in condemning it, and adhere to another. Of course the best rule in photography is to select that which you can work best, and not change. It is the usual fact that a photographer who is continually changing his ingredients is not the successful photographer. However, there are times when there is room for an article which is superior to anything else in the market, and this seems to be the case in the matter of gun-cotton. There are many excellent grades of this article to be had, yet we feel that an improvement can be made upon them all, and we shall therefore bring to the attention of the trade shortly an article which we think will supersede all others. We do not wish to cause any great explosion because of this fact, or in any way to get up a consternation this hot weather, but advise our friends to keep cool until we verify what we have said and promised.

SCOVILL'S CONVEX GLASS IS THE BEST.

SWASEY'S

SCENIC BACKGROUNDS

AND

ACCESSORIES

TO

PHOTOGRAPHIC PRINTS.

Patented Dec. 14, 1875.

Card size, 75 cts. Cabinet size, $1.40. 8 x 10 size, $2.25.

SCOVILL MANUFACTURING CO.,

New York,

TRADE AGENTS.

For Sale by all Dealers in Photographic Stock.

E. WEISKOPF, MANUFACTURER OF **OPTICAL LENSES,**

No. 182 CENTRE STREET,

(UP STAIRS,)

Cor. Hester Street, NEW YORK.

SPECIALTIES! WHICH EVERY PHOTOGRAPHER SHOULD TRY.

S. P. C. Nitrate of Silver—Pure,

S. P. C. Varnish,

S. P. C. Iodides and Bromides,

S. P. C. Double Iodides and Bromides,

Scovill's Nos. 1, 2, and 3 Collodion,

S. P. C. Double Iodized Collodion,

S. P. C. Outfits for Chromo-Photography,

Newton's Quick Collodion,

Newton's Portrait Emulsion,

Parys' Special Cotton for Dry Plates,

Schering's Berlin Chemicals, **Tannin**—Pure,

Tripoli—Pure, for cleaning glass,

Parys' Negative Gun Cotton,

Laurent's Folded Filters,

The Multum in Parvo Pocket Cook Stove.

SCOVILL MANUFACTURING CO., 419 & 421 Broome Street, New York.

might be called "The Little Red Book," as it is bound in red. It is very complete, and abounds with illustrations of photographic goods, furniture, and apparatus of every kind, frames, mouldings, etc. The prices of all the goods are so very low that every one discovers at once that these gentlemen are determined to meet the times. Their elegant building, 160 x 25 feet, containing four floors and a basement, is entirely occupied by their various kinds of goods.

Westboro' Photograph Rooms.—The photograph rooms in Central Block, opened on Wednesday, recently occupied by O. C. Knox, and now by T. N. Gates, have been enlarged, remodelled, and refurnished, being unsurpassed in Worcester County. They occupy the entire south front of the block. Entering the reception-room from the hallway we find a newly and handsomely furnished room, and on the walls and in the show-cases some gems of art that are but to be seen to be admired. In front, corner Main and South Streets, is the ladies private parlor, also nicely furnished, and in the rear of the reception-room is the large and spacious operating-room, with dressing-room, frame-room, printing-room, and dark-room connected.

The operating-room is newly frescoed, and lighted in the most artistic manner. All the instruments are new, among them being a fine camera manufactured by the American Optical Company of New York, which is a screw adjustable machine that can be set with finest accuracy, being the most perfected instrument of its class in the market. Also scenic and plain backgrounds by Seavey, of New York, and all the modern appliances of the profession have been procured by Mr. Gates. The proprietor is making cabinet and promenade pictures a specialty. He is well known to be a first-class artist, his prices are reasonable, and all who visit him will find themselves heartily welcomed, his rooms pleasant, and work satisfactory.—From *The Westboro' Chronotype.*

Denison, Texas, August 27th, 1877.

Mr. J. C. Somerville,
St. Louis, Mo.

Dear Sir: The goods arrived "O. K.;" found them in good condition. I have not given the 3 B Voigtlander & Son 4-4 lens a fair trial yet. The ½ No. 2 A "Peerless" I do not think I have ever seen equalled. It works *very* quick and has great depth. You will please send me your price list of the "Peerless" lenses. What figures can you give me on a 4-4 "Peerless?"

Yours respectfully,
George Perkins.

Spencer's Improved Centennial Head-rest.—We have just added some very important improvements to this already excellent head-rest, which have made it yet better than ever before. It seemed so entirely adapted to the wants of the photographic poser, that we thought it could not be made any more so, but Mr. Spencer, who is a practical photographer, has worked at it and thought over the matter until he has been enabled to make his rest absolutely perfect. It is for sale by all dealers. Price, plain rods, $14.00; nickel-plated, $17.00. Examine it before you buy any other.

S. P. C. Photographic Cotton—the latest and best brand.

PHOTOGRAPHING BY LIGHTNING.

A Ghost Holding an Anchor that Ordinary Mortals Cannot See.

The visitor to Jay J. Hartman's photograph gallery, at 260 Bowery, is expected to look with awe and faith upon a small negative—quarter size—on which is faintly outlined a shadowy presentment of a woman's face and form. As a ghost the subject is a very presentable sort of person as ghosts run. She seems to be about twenty-six years of age; her hair is smoothed down in a neat and, consequently, unfashionable way; her face is suggestive of consumption, and has a resigned, "not-my-fault-ish" sort of expression. As a truly modest ghost, she wears a very high-necked dress, with a dainty collar. To the skeptical she becomes altogether too vague for contemplation from the waist down; but the eye of faith—that is of Mr. Hartman—sees an anchor, cherished symbol of hope, in her right hand.

Mr. Hartman, who is a tall man, with a high forehead, big eyes, and large black whiskers that form an inverted V, said to a reporter for *The Sun:*

"I took this in my private rooms, at 80 Fourth Avenue, on the 14th of August, at half-past 9 o'clock P.M., by a flash of lightning. I was all alone—solitary and alone. I prepared the plate in the ordinary way, except that I used certain chemicals not used in common photography, and put it in the camera, which I set in the window, directed upward toward the heavens, at an angle of forty-five degrees. There was nothing visible in front of it but the black night and the storm. Then I drew the slide and unveiled the camera, and when that heavy lightning came this form was taken. You see it stands between two clouds, and here, on this side, is the rain pouring down. Now, I'll back up all about this. I'll prove it to the satisfaction of any three gentlemen for twenty-five dollars apiece. They can furnish their own marked plates and do the work themselves, but the chemicals and the camera I will furnish myself. There's a little secret about the chemicals. They are finer than are ordinarily used. I don't want to say what they are now, because I haven't got this thing down as fine as I want it yet. I think I'm all right on it, but I haven't got it just settled yet. But you see yourself ordinary chemicals wouldn't do to photograph by lightning with anyhow,—there wouldn't be any harmony, as it were. As for the camera, they can take it all to pieces and see that there's no trick about that, and they may do all the preparing and developing of the plates themselves. I will only put my hands on the outside of the covered camera, and they may search me to see there's no trick. All I want is to put my magnetism in conjunction with the chemicals to act on the reception of the mysterious influences, as you may say. I've been experimenting over a year, but this is the first of the human form that I ever got in this way, and I believe it is the only one in the world.

"Have I ever taken any spirit pictures? Oh, yes. I'm solid on that. I've got a standing challenge for $1500 that I can produce from one to thirty-five spirit pictures—faces, you know—on a plate, and let people use their own plates and chemicals and camera. I know there was a fraud that pretended to do it exposed in Boston the other day, but I don't fool anybody, and I court investigation. I'm willing to produce spirit pictures in any room that is selected under the conditions I said, and in presence of any one they please. I gave an exhibition in Brooklyn two weeks ago last Friday before some of the finest and most intelligent gentlemen of that city, and produced some beautiful spirit pictures in perfect darkness. I can do the same thing any time, in the dark or the light. A man named Jones came up from Nashville once to expose me when I was in Cincinnati, but I convinced him.

"What do I claim? Well, the atmosphere is made up of live things, or else we couldn't live. There is life in the air as much as in the water, only we can't see it the same; and as I get at these things, this life in the atmosphere is to keep us alive. It's a science, and after I get a little more settled I'll produce something very fine. I think this is the spirit of something of that kind. You see it's a female face and figure. You can't see the anchor, but I can, because I'm used to seeing things in negatives, and you see she's standing among the clouds with the rain driving down on this side. I can do more like it. If I couldn't I wouldn't value the discovery, that is, if I couldn't do it over and over; but you want the right sort of lightning for it. You want a clear, sharp lightning. This common lightning won't do. I'm going to have Sarony do the printing from this. He can do it better than I can, for he has superior facilities. Then I'm going to get the copies out, with handbills under them offering a challenge. Here's a copy of the handbill I've just written out. I'd read it to you but I'm afraid I can't, for it's got cold, and I ain't much of a writer. I'm no learned man, but I ain't a fraud."—*New York Sun.*

Morrison's Wide-Angle Lenses—the best of their kind.

SURFACE MARKINGS ON COLLODION NEGATIVES.

It may be remembered, that at the last meeting of the South London Photographic Society the subject of "oyster-shell" or

THE MULTUM IN PARVO POCKET COOK STOVE.

"surface" markings on collodion negatives was introduced for discussion, and that a bath of a certain construction was exhibited by Mr. E. W. Foxlee, who stated that by its adoption no markings of the kind under consideration could possibly occur. When we published the report of the meeting in question we promised to supplement our remarks with a drawing and description of the bath, and that promise we now fulfil.

The bath itself (and we confine our description to one which is now before us) is a flat well-bath formed of porcelain, the well at the end of the tray being of such capacity as to hold enough liquid to flood the plate thoroughly when placed on the bottom of the tray, and an inclined motion given to the latter. This will be better understood from the following diagram (Fig. 1), in which is represented the bath, the end *a* forming the well of which we have spoken. The open space of the bath represents the dimensions of the largest plate capable of being sensitized, and a ledge upon the bottom, which cannot be shown in the diagram, prevents the plate from slipping down into the well when the tray is tilted upwards in the manner and for the purpose now to be described.

Fig. 1.

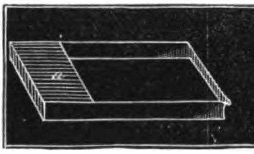
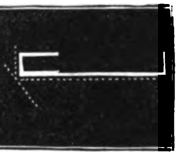


Fig. 2.



The well-tray is fitted into a wooden case constructed in such a manner as to allow a plate to lie in a horizontal position. It stands on two end-pieces, one of which is inclined inwards at a considerable angle, the object of which is to allow of the bath being reared up on one end in a sloping direction. The diagram (Fig. 2) shows the configuration of the case in section. The solid line indicates the bath in outline, while the dotted line represents the case.

The use of this apparatus is as follows: The well having been nearly filled with nitrate of silver solution, and the bath having been previously placed so as to stand at a slope, the collodionized plate is laid upon the bottom, its lower end resting upon the shallow ledge of which we have spoken. An easily-fitting, although light-tight, wooden cover is now placed upon the case, and the bath is laid in a horizontal position, by which the silver solution flows over the plate in an unbroken sweep. All this may be done in a lighted room, owing to the exclusion of the light from the bath. After allowing the plate to remain immersed for any determined portion of time the bath is reared up on end, by which the liquid flows back into the well, leaving the plate in a sloping position to drain.

It has already been shown that the perfect drainage of the plate in a moist atmosphere is an effectual preventive of the formation of surface markings, and it will be seen that the bath now described provides the requisite conditions for effecting the necessary drainage. The interior of the case and of its cover is coated with paraffine, by which both remain unaffected by the moisture.

It will be evident that the bath may be constructed of any other material than porcelain; indeed, if we recollect rightly, the first bath of the kind ever constructed was formed of wood; we allude to the large bath exhibited a few years ago by Mr. H. J. Burton.

The present hot weather, and the consequent prevalence of surface markings, renders this an opportune time for directing special attention to a simple yet excellent piece of apparatus by which the formation of such markings will be rendered impossible.—*Brit. Jour. of Photography.*

The Photographer's Evaporator and Alcohol Stove complete, $1.25.

PHOTOGRAPHIC HINTS.

Time of Exposure.—No definite rules can be given on this head, as much depends upon the strength of the light; the focal length of the lens, and the size of the stop used. Negatives taken in a bright light, and with short focus, stereoscopic or carte-de-visite lenses develop readily, but pictures produced by lenses of long focus and small aperture the reverse. Hence, in the latter case, pains should be taken to hit the right time of exposure, and the collodion should

THE BEST PORTRAIT LENS IS THE "PEERLESS."

not be too newly iodized. As a rule, if the image start out the moment the developer is applied the exposure has been too long. On the other hand, if it appear slowly and the deep shades are long in making their appearance, the picture is underexposed. A properly-timed picture makes its appearance gradually; first the high lights, then the middle or half-tones, and, lastly, the deep shadows. In the case of a landscape the sky should not be so weak as to print through much, nor should it be so intense as to obliterate every trace of cloud and atmosphere, and producing in the finished proof that photographic horror—a white sky. From the above we learn, therefore, that feebleness of the image may be caused by overexposure in the camera. It may also be produced by the use of impure nitrate of silver, or the presence of too much nitric acid in the bath.

Miscellaneous Observations. — The temperature of the operating-room, as well as the various solutions, should never be less than 60° Fahr. during the winter months, otherwise a very great loss of sensitiveness will ensue. The plain collodion should be kept always in a dark and cool place, or the ether will gradually form ozone, and acquire the property of striking an immediate brown color on mixing with the iodizing solution. In warm weather the collodion will sometimes flow thickly after a few plates have been coated. A mixture of the best ether with an equal bulk of absolute alcohol is proper for diluting it. In very hot weather it is sometimes an advantage to dilute only with "absolute" alcohol (sp. gr. .805), adding one drachm to each ounce. This will remove greasy lines, and prevent the film from becoming surface-dry. N.B.—Do not attempt to use impure "methylated" ether and alcohol for diluting, otherwise an excess of free iodine may be eliminated and the sensitiveness injured. In hot weather the plate must not be kept too long before dipping, or between sensitizing and development, otherwise the film will become partially dry, and a loss of density will result. Another cause of weakness of the image is an improper mode of applying the developer, viz., scattering too large a quantity over the film, so as to wash off the greater part of the nitrate of silver. The density of the negative will also vary much with atmospheric conditions imperfectly understood, the same collodion giving sometimes a weak and sometimes a strong picture.

Causes of Failure.—*Excessive intensity* may be due to underexposure in the camera, the presence of methylic ether in the collodion, or to great brilliancy of the light. If the nitrate bath be in good order the use of a weak sulphate of iron developer will often prove a remedy.

Lines running down the film like streams of muddy water may be caused by dipping the plate too soon, removing it from the nitrate bath before the ether has been washed away, and not draining properly. They are more liable to happen when the bath has been long in use. The direction of the plate must not be changed after it has been placed in the slide, or lines will almost certainly be produced.

Straight black lines, taking the direction of the dip, are remedied by giving the plate a lateral motion immediately after putting it into the bath, or lift the plate in and out of the bath immediately after immersion.

Comblike markings often result from the collodion becoming surface-dry before immersion in the nitrate bath.

Transparent wavy markings at the most depending part of the plate are produced by the bath liquid accumulating at the lower edge, and will be obviated by draining more closely, also by holding the plate a few seconds longer before dipping.

Dust and scraping of the door of the slide are common causes of spots on the film. Transparent specks, with a central black nucleus, almost invariably originate in the camera.

Pinholes are frequently produced by leaving the plate a long time in the nitrate bath; a careful inspection, previous to development, will in such a case show little points projecting from the sensitive surface. Pinholes may also arise from the use of a muddy developer, a prolonged intensification on a weak image, a nitrate bath saturated with acetate of silver, or an excess of iodo-nitrate of silver, especially in warm weather. In the latter case dilute the bath with its own bulk of distilled water, then filter, and add

MORRISON'S NEW RAPID COPYING LENS.

sufficient silver to make up the proper strength.

Blurring, or reflection from the back surface of the glass, often seen around the edges of windows in interiors may be prevented by laying a piece of moist red blotting-paper on the back of the plate. This should be done also when copying white and black maps, etc.

Fogging often indicates a bath out of order (in which case the shorter the time that the plate remains in the bath after the film has been formed the better), or the presence of the diffused light in the camera or developing-room. Impure gutta-percha or ebonite is injurious to the silver solution, and produces decomposition.

The film splitting off from the glass on drying. The liability to peeling off is greatly increased by long development and subsequent over-intensifying. Try a little longer exposure and shorter development.

Want of intensity. The light is bad, excess of nitrate acid in the bath, the bath is weak, or the collodion is pale yellow or colorless. Remedy: Add a few drops of tincture of iodine to the iodized collodion, or a few grains of acetate of soda to the developer.

White marblelike stains of reduced silver on the surface of the film. This effect is most certainly produced by a dirty state of the corners and sides of the dark slide. The remedy is obvious: carefully wash and wipe the dark back when finished with; also varnish the corners with sealing-wax varnish. All wet-collodion slides should be provided with a groove at the lower edge (first introduced by W. W. Rouch & Co.) to catch the drip. A small strip of clean blotting-paper should also be placed along the bottom of the plate at the back.

A more intense action of the developer in one or more portions of the plate. This is frequently met with in an old, much-used bath, and arises from the accumulation of the liquid in drops or beads upon the surface of the plate. Remedy: Boil down the nitrate bath in a glass flask to one-half, then add the requisite quantity of distilled water, a few crystals of nitrate of silver, and one or two drops of nitric acid.

Want of half-tone may be caused by a bad light, insufficient exposure, and subsequent over-intensifying.

Want of detail in the shadows, with the high lights very intense, are evidences of underexposure in the camera.

Flatness, on the other hand, is the result of overexposure; it may also be caused by insufficient intensifying or fog produced by diffused light, etc.—*From Rouch's Catalogue.*

Try Parlor Paste for Mounting Photographs.

THE ART OF PAINTING UPON THE PHOTOGRAPHIC IMAGE.*

No. 1.

THE writer of this and following papers on the above subject hopes to give a tolerably exhaustive guide to beginners. They are intended to help them at the commencement, and to save them time, trouble, and much discouragement in finding out things for themselves. In the course of the series the writer thinks it possible that those possessing experience may find here and there an acceptable hint, especially as regards painting on autotypes, about which there seems to be still great misconception; indeed, to the writer it seems odd that at this time of day any valuable or highly-finished work should ever be put by artists on anything else. Autotypes are easier to paint upon than albumenized prints, and, to any one not very clever at drawing, far preferable to a silver print on plain paper, besides, what should surely be an object with everyone who wishes to deal fairly by their clients, their permanence.

First, then, I will treat of monochrome work, or work in one color or tint. For this the student will require a tube of moist water color, ivory black, a half-cake of burnt carmine, a half-cake of burnt sienna, a bottle of Chinese white, a bottle of prepared gum water, and, for autotype work, a little powdered pumice; also a sharp knife, a piece of ink eraser, and a piece of vulcanized india-rubber.

I will describe the method for autotype

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* From British Journal.

S. P. C. SABLE PENCILS ARE THE BEST.

work, because it is the same as on silver, except that, in the latter, you cannot have the inestimable advantage of being able to scrape to any extent, which is generally the first thing to be done to an autotype, and it is so hard that you may scrape it with a knife, or take out a light where required with an ink eraser, and the ground will be as smooth and as workable as ever.

Take, then, an ordinary autotype print, and, holding the piece of vulcanized india-rubber firmly, carry it across the picture all over from left to right and from top to bottom. This, it will be found, will generally remove all traces of grease; but if that fail, a strong solution of ammonia will invariably answer the purpose. If the latter be used, wait until the picture is *quite dry*, and then examine it for any black spots or shadows that require lightening. These may then be removed with the knife or ink eraser, or toned down, as the case may be. If the face be very dark all over, rub it briskly with powdered pumice, blowing it off now and then to see how you are getting on. The high lights on forehead, nose, etc., may then be improved and lightened, if necessary, with the ink eraser.

Next consider if the hair or face can be improved by a wash here or there. If the hair be white or gray it will probably be improved by a light wash all over, using gum with it, and then, when dry, a space representing the highest light damped and quickly removed with a sweep of a clean, dry cloth. Also, in the case of a very white face, arising from a dense negative, a wash all over will save much time and trouble. Soft, indefinite lights may be got by taking them out with a dry brush whilst the wash is wet; but sharp ones are got by the former method. The drapery should now be attended to by darkening the shadows with color and plenty of gum. Now see to the eyes. In most cases the spark of light in the eye will require to be lessened, preserving, however, the form of it; and the black spot or pupil will generally bear enlarging, but be careful to keep the shape the same, and also its relative position in regard to the outline of the iris or colored part of the eye. It is very essential to give the eye a lifelike, thinking expression; and if this be done it will hide a multitude of sins in other parts of the picture.

No. 2.

In resuming my instructions for finishing in black and white, let me urge upon the student to do as much as possible without stippling or niggling. Let him get all the effect he can by washes and broad touches, and in finishing or sharpening up the drapery to avoid lines as much as possible, making the shadows define everything. Even round the lapel of a coat, for instance (where an amateur is so apt to indulge in a line), it can be done more artistically, and, if you examine the photograph, you will be convinced more naturally too, by a series of long, acute-angled shadows. Consider the direction of the lighting, also, in every detail. Nothing looks so bad as to see a black line running all round a button, for instance, instead of a shadow at one side and a light at the other. Again, avoid marking out such things as the plaits in a shirt front with black lines on *both* sides of the plait; they should be soft, broken lines of shadow on one side and touches of white on the light side. These may seem small matters, but no amount of the most beautiful stippling will ever produce a picture pleasing to the educated eye if such matters be neglected or badly done.

As regards stippling, remember it is a means to an end, and not the end itself. The absolute beginner had better practice upon note paper at first. Let him make a number of square washes of color—some light, some dark, some flat all over, and some graduated from light to dark—horizontally and perpendicularly, using sepia for this exercise. Taking a fine-pointed sable brush, let him dip it in a moderately fluid, faint tint of sepia, and try to fill up all the inequalities, fitting the light parts with tints that will match the surrounding parts —first with large touches, and then with gradually smaller and smaller touches until the whole is quite even and regular. The result of trying to do this will be most discouraging at first—the beginner will seem to get the patch more uneven than before—but there is nothing for it but perseverance, and he will find himself suddenly slip into

A HISTORY AND HAND-BOOK OF PHOTOGRAPHY, $2.50.

a method of his own. When he can manage with simple sepia on note paper, let him mix a tint of burnt carmine (which is recommended as being permanent) with ivory black and gum water, so as to match in tone and gloss the face of the photograph—that is, if it be an autotype or albumenized silver print; if a plain paper one omit the gum, as gum should not, I think, be used in the latter, except a few finishing touches about the eyes, corners of the mouth, nostrils, etc.

Now let him carry his experience of stippling on to a face, and try to fill in all the little uneven patches and holes, strictly preserving, however, the lights and shades and markings of the muscles. The object is not to fill up all depressions and wrinkles, but simply to furnish a pleasing regularity of grain, so to speak, to the shadows already there. Still there are cases where muscles may be contracted so as to give an angry or pained expression to a face undergoing the, to many, painful experience of being "taken." Perpendicular creases between the eyebrows may generally be filled up with advantage, and the pained look caused by the eyebrows being pulled upwards at the extremities next to the nose may be obviated by simply cutting a little off, and restoring the arch of the eyebrow as it is when at rest. A too strong, dark line running from the corner of the mouth downward, should be softened and lightened, and the corner of the mouth turned up a little if anything; also, if the line running from the nose to the mouth be very black it should be modified. The whole of the space between the upper lip and the nose will often be found to be too white, and the addition of a half-tone carried all over it often acts like a charm in removing a sulky expression.

The student may next take his note-paper and try his hand at cross-hatching. He should carry a light wash of sepia all over half a sheet of note-paper, then fill it up here and there where requisite to make it tolerably even, and, when quite dry, let him proceed to cross it all over with broad, short lines—first in one direction and then across—taking particular care to let the lines cross at as acute an angle as possible; anything approaching a right angle is bad. Let him examine good engravings and see how it is managed there. If well done the effect is valuable and pleasing in backgrounds. If it be thought desirable to have the effect very fine and close, a kind of triangular touch may be placed in each lozenge-shaped aperture formed by the crossing of the lines. When this cross-hatching is used behind a head I think it best to treat it in this manner near the face and head, leaving it coarser and more open as you get near the corners of the picture. It will be found that this has the effect of throwing back the ground behind the head, and preventing confusion to the eye.

JOSEPH WAKE.

Scovill's Pouring Bottles, 20 cents each.

A DANGER TO BE GUARDED AGAINST.—An experienced chemist and photographer sends the following timely hint:

"Now that so many persons are experimenting with alkaline development, a danger of fog arises from the escape into the atmosphere of ammonia vapor, when such experimentation goes on in the same dark-room in which the wet process with bath and iron developer is also being practiced.

"In order to avoid this danger, it is imperative, before preparing and developing plates in the ordinary manner, after plates have been developed by the alkaline method, that the air of the dark room should be completely changed by ample ventilation, or neutralized by the spinkling on the floor, etc., of acetic acid."—*Photo. News.*

Scovill's 8x10 Negative Backgrounds, 50 cents.

THE PHOTOGRAPHIC BURGLAR.

No one can deny that the prosperous photographer, be he located where he may, acts generously in vacating his studio for the benefit of the photographic burglar; his conduct in this matter is at once noble and liberal and humane. Unquestionably he prizes the advantages of his studio, and detests the expensive habit of loafing around other places to see what he may find out. Nevertheless such is his pity for the photo-

TRY NEWTON'S EMULSION.

graphic burglars that he cheerfully places his studio at their disposal, and never thinks of requiring from them any expression whatever of gratitude. In the midst of the selfishness and heartlessness of our daily life it is wonderful that hundreds of photographers in these cases should semi-occasionally subordinate their effort to that of burglars with whom they have no ties of friendship or business, and their noble and charitable spirit deserves to be commended in the highest terms.

We have known photographers to make it a rule, not only to submit to the exactions which these burglars make upon them, but really to go out of their way and bring them and coerce them to take all the advantage they can of them. If a burglar does not come along in the course of human events once a year, he is offered inducements. No doubt such photographers think that they do their whole duty when they act in this way, and we should be the last one in the world to underrate their generosity in the least, but may we not be permitted to express regret that this generosity is not made perfect by permitting the burglars to come in and help themselves to whatever property there may be under the skylight. Unfortunately this is by no means always done, and the result is a painful degree of dissatisfaction among our best and most intelligent photographic burglars.

As a rule, the burglar shows some little courtesy, and leaves a portion of the cash, with the assent of the photographer, and takes instead his notes. The modern burglar, however, is becoming too sharp for this; he has learned that photographers are an erratic genus, and that the American photographer will sometimes open his doors wide, and permit the burglar to have full sway for a time, and give him his notes; but immediately after the gentlemanly burglar has left, the obtuseness of the photographer seems to disappear, and when payment is demanded for the notes it is refused; as a consequence the burglar's next act is to try to do what he could have done in the first place, namely, get possession of the whole studio. But like want of consideration is often shown by photographers in their frequent failure to leave their camera and their lenses and their silver wastes at their front door, in order that the burglar may find them ready for possession when he comes. It is a maxim among burglars that every photographic studio owes them a living. They are usually inventors; upon them the life of photography hangs, and they would rather be hung than not to get their living from photography; any evidence of indifference on the part of photographers angers them, and causes them to maliciously bring themselves to adopt all sorts of deliberate devising schemes for the annoyance and persecution of the latter. This annoyance is sometimes returned; photographers have been known to be so cruel as to place broken bottles along the entrance which led to their studios for the annoyance of the burglar. Worse than this, a fiendish photographer once so arranged his baths that a burglar on entering the dark-room fell headlong into them, and on his first appearance in the sun he became like the spotted leopard. But worse than all this, a dreadful disciple of the black art, in human shape, deliberately left his gallery to the mercy of one of these burglars, first, however, having placed bottles of cyanide in all sorts of handy places, and going so far as to fill his ice-cooler with the usual accompaniment of ice. During one season this wicked photographer poisoned no less than seven photographic burglars, four of whom died, and the other three will suffer the rest of their lives from this dreadful trap.

We hear that more of these fellows are coming to our land, and no doubt they will find open doors. There are millions of money here awaiting them these hard times, and plenty of photographers, with diseased minds, who are ready to see them and to be victimized by them. If such photographers really wish to secure happiness for their burglarious fellow-creatures, and enjoy the pleasures of intelligent charity, they will have all of their bath precipitated, their wastes carefully packed up for removal, their lenses unscrewed and nicely tied up, and their cameras packed in boxes, with the name, size, and style marked upon the lid. Perhaps, if not too much trouble, it would be well also to remove the glass from the skylight, and have it too carefully packed in

F. W. DEVOE & CO.'S TUBE OIL COLORS.

boxes. Burglars, as a general thing, do not care for photographic specimens, therefore it will be needless to remove these from the walls. Further information will be given on application at this office.

Phenix Varnish in 8 oz. Dreg Bottles, only 50 cents.

RAPID COLLODION.

M. GOUGENHEIM has sent to the Photographic Society of France a number of bottles of a rapid collodion, of which the following are the formulæ:

COLLODION.

Ether,	6700 parts.
Alcohol,	5955 "
Cotton,	1 part.
Double Iodide of Potassium and Cadmium,	46 parts.
Iodide of Ammonium,	30 "
Iodide of Cadmium,	20 "
Bromide of Cadmium,	22 "

DEVELOPING SOLUTION.

Filtered Water,	500 parts.
Sulphate of Iron,	50 "
Sulphate of Copper,	10 "
Acetic Acid,	17 "
Alcohol,	10 "

SILVER BATH.

Neutralized at seven per cent.

INTENSIFIER.

Distilled Water,	250 parts.
Pyrogallic Acid,	3 "
Acetic Acid,	10 "
Alcohol (36°),	10 "

SOLUTION OF NITRATE OF SILVER FOR INTENSIFICATION.

Distilled Water,	50 parts.
Nitrate of Silver,	1½ "

—*Bulletin Belge.*

Phenix Collodion in 8 oz. Dreg Bottles, 50 cents.

ALKALINE DEVELOPMENT.

THE presence of nitrate of silver is not necessary, and even appears to be injurious in the alkaline development. This process, which is more generally used in the dry processes than it is for wet plates, answers perfectly well for emulsion and bromized collodion, in which it can be used in both cases.

The opinions of chemists are much divided with regard to the theory of alkaline development. It has not yet been thoroughly investigated, but the following facts may be admitted.

It is well demonstrated to-day that the alkaline salts exercise an oxidizing action; the ammonia acts on the bromide with which it is mixed, transforms it into oxybromide, and eliminates a portion of the bromine. This simple body combines with a proportion of the base, and forms compounds very stable and oxidizable only with great difficulty; it unites itself with the iodine and iodides, and forms a compound corresponding to the bibromide, which becomes fixed and inoxidizable. This prevents the fogs which would most certainly result from the contact of the iodide of silver with the alkaline salt, contact which would convert the whole coating into oxyiodide of silver, identical with that produced by the chemical action of the luminous rays, and which, consequently, would become entirely black under the action of the reducer.

This effect is also remarked in the case of a too long exposure, when bromo-iodized collodion is used; the bromine, which has less affinity for the oxygen than the iodine, separates itself from the oxybromide, spreads itself over the plate, imparting to it a general gray tone, which is known as *solarization.*

The alkaline salt exercises its oxidizing action on the oxyiodide of silver produced by the chemical action of the light, and converts it into pure oxide; the displaced iodine allows the reducer to decompose the oxide by taking its oxygen and leaving a deposit of metallic silver, which action is continued until the total reduction of the oxyiodide, resulting from the chemical action of the luminous rays.

The alkaline development is much more energetic, active, and powerful than the acid development. Its use in the dry processes renders it valuable, as it permits a notable diminution in the time of exposure.

The bromide, in the alkaline reducer, is a moderator of incontestable utility; it plays

CROSS-SWORD ALBUMEN PAPERS.

absolutely the same part as does acetic acid in the ordinary acid development. It should be used in larger quantity in hot weather, and when the exposure has been long; and in a smaller quantity when the weather is cold and the exposure has been short. It is the bromide that gives light to the print and prevents accidental fogs.

In the alkaline development, I have used with great advantage, *glucoside of ammonium* instead of pure ammonia, carbonate of ammonia, and the sugary solutions of lime and potash. I use it absolutely in the same manner as I do the ammonia, that is to say, a few drops in the developer; and by its use I obtain much greater intensity, vigor, and regularity in the development of the image than with the above-mentioned substances. It may also be used with the ammoniacal reducer to give vigor when the details have appeared. The results obtained are truly remarkable. In this case it is always an advantage to add, at the same time as the glucoside of ammonium, a few drops of a bromide. I prefer the bromide of ammonium.

I prepare the glucoside of ammonium in the following manner:

In 100 c.c. (3½ fl. ozs.) of liquid ammonia I dissolve 10 grammes (154 grains) of grape-sugar (glucose); after resting several days, I filter, and add 100 c.c. (3½ fl. ozs.) of water. I again filter, and keep the liquid in a bottle with a glass stopper. Age does not appear to injure it.

—*Moniteur.* ERNEST BOIVEN.

Lewis & Holt's Collodion in 8 oz. Scovill's Pouring Bottles.

PILE'S VOLUMETRIC SILVER TEST.

To oblige subscribers who have forgotten our previous notes on this useful test, we repeat a description of it with directions for its use.

DESCRIPTION, ETC. — This is a tube so marked that a definite quantity of silver solution and test liquid is accurately determined, without the necessity of using any other measures. The whole calculation being graduated on the tube, from experiments previously made and verified.

By means of this apparatus, the number of grains of nitrate of silver contained in a fluid ounce of liquid can be readily and accurately determined.

The silver bath hydrometer, generally employed for this purpose is obviously liable to serious objections; its correct application being restricted to the case of pure solutions, and its employment in other circumstances only leading to erroneous results. The volumetric test on the contrary is always reliable, the presence of foreign substances not in the least interfering with its accuracy.

The employment of the instrument requires only the previous preparation of a test solution of common salt (chloride of sodium) which may be kept on hand in any quantity. This is made by dissolving 140 grains of well-dried rock salt in one pint of distilled water (7291 grains), at 60° F., and adding to the clear solution two or three grains of bichromate of potash.

DIRECTIONS.—Fill the tube up to the line marked 0 at the commencement of the scale, with the silver solution to be tested, observing that the lowest curve of the liquid should always range exactly with the mark, when held on a level with the eye.

Then add the test solution, freely at first, afterwards gradually, either by means of a dropping-tube, or from a bottle with a thin lip; closing the tube with the thumb, and shaking well after each addition. The buff-colored precipitate is allowed to settle, a fresh quantity of the test solution is added, again shaken, and so repeated until finally no more cloudiness is observed upon the addition of a drop more of the test. The color of the precipitate at this time will have changed from buff to cream. The process is now complete, and the level at which the liquid in the tube stands will designate the number of grains of nitrate of silver contained in each fluid ounce of the liquid.

NOTE.—When the amount of the nitrate of silver in the liquid is considerable, and the precipitate thrown down by the test solution is of a rich buff color, fresh additions of the test can be added immediately, without waiting for the liquid to become clear; when, however, the precipitate is observed to become paler, it is necessary to proceed cautiously as at first directed.

CLEMONS'S ALBUMEN PAPERS.

NOTE.—Upon repeating the trial, or where the quantity of nitrate of silver is approximately known, the process can be shortened by adding at once the requisite quantity of test solution nearly, and then finish gradually.

For sale by Scovill Manufacturing Co., N. Y. Price $2.00.

Newton's Portrait Emulsion works quicker than Silver Bath Plates.

Simplified Dry Processes. Simultaneous Exposure and Development.

MUCH attention is now being paid to emulsion processes, in the hope of realizing the following conditions: Sensitiveness, facility of preparation, and certainty in the results. The most simple process now in use requires at least twice as much labor as the wet process, and it is in the hope of finding something more simple than is now known, that I have undertaken experiments in this direction. I have accepted as the best base the ingenious emulsion process, as it does away with a great number of the operations used in the preparation of the present negatives, opening up besides a new path—that of *simultaneous development*.

It seems a strange assertion to make, that we may simply collodionize a plate, place it in the frame and expose it, and some hours afterwards on opening the frame, find there a print which, for its final completion, requires nothing more than the operation of fixing. With the new emulsion process this is not only true, but of very easy execution.

The plate simply collodionized develops itself spontaneously after the exposure, so that we need not be concerned about sensitizing, washing, and developing; the necessary operations to be performed are reduced to a minimum; collodionizing, exposure, and fixing.

By using the valuable indications given by Messrs. Carey Lea, Liesegang, Sayce, and Bolton, and quite recently by Mr. Chardon, I have been able to obtain prints spontaneously developed, which lead me to hope to make this process practicable.

Without entering now into long details (which I will give hereafter), I will briefly state my mode of operation to reach the result mentioned, and to obtain the specimen accompanying this communication.

Take 30 c.c. (8 fl. drachms) of my emulsionized collodion, to which add from 5 to 10 drops of gallic or pyrogallic acid at 10 per cent. in alcohol, from 3 to 5 drops of acetic acid saturated with acetate of lead, and about 1 c.c. (17 minims) of pure glycerin.

This preparation should not be made too long beforehand, as it does not keep for any length of time. These substances are well shaken with the emulsion, and the collodionizing is made upon plates previously prepared with a coating of caoutchouc varnish, to which preference should be given. As soon as the collodion is fixed it is placed in the frame and exposed for about double the time required for an ordinary wet plate. The exposure finished, the frame is removed and laid aside, with the plate in it; or the plate is taken out and placed in a box, at the bottom of which are a few sheets of damp, bibulous paper, being kept at a short distance above them by pieces of cork placed at the angles.

At the end of a certain time, which may vary from one to two hours, if the plate is examined we will be surprised to find a perfectly-developed image ready for the fixing operation; if too weak, nothing is easier than to intensify it afterwards, by the ordinary strengthening processes.

The prints thus obtained are vigorous, and do not seem to have a great tendency to fog. The results obtained by this process, which certainly deserves careful study, give me a favorable opinion of what may be obtained. With regard to the reproduction of contrasts, there is remarkable power—buildings partially lighted, partially in the shade, may be reproduced without any glaring contrast in the lights and shadows. In any event, this process of great simplicity, gives a rapidity which can rival that of the dry processes actually in use.

—*Moniteur.* ERNEST BOIVIN.

S. P. C. Photographic Cotton—the latest and best brand.

CLEMONS'S ALBUMEN PAPERS.

SCIENTIFIC JOTTINGS.

In a communication to the *Chemical News* for the 3d and 10th insts. Mr. J. Townshend Austen, of the New York School of Mines, describes a number of little "wrinkles" for use in the chemical laboratory, some of which we may extract with advantage for photographic readers.

1. *Felt Pads as Supports.*—He recommends pads of felt half an inch thick to be always at hand, for the purpose of supporting beakers containing hot solutions or other hot vessels which are liable to crack by sudden cooling. He also recommends these pads to be used as supports for all large glass vessels, as they, being as a rule not so well annealed as smaller ones, are liably to fly and snap upon being briskly put down upon a table where even an excessively minute particle of grit happened to rest.

2. *Microscopic Crystallization.*—He gives a method of producing crystals for examination under the microscope—one which would answer well if they required to be photographed. He places a drop of the liquid to be crystallized upon a watch-glass, then covers it with another similar glass, which causes the drop to expand to a film, and finally places a small quantity of ether upon this upper glass. Its evaporation produces a degree of cold which causes the crystallization to take place at once, and the rapidity or slowness of growth can be regulated by the amount of cold allowed to be produced by the ether evaporation.

3. *Washing Precipitates out of a Flask.*—Those who have made chloride of gold by precipitating with iron, washing, and redissolving will have experienced considerable difficulty in washing out the last traces of gold. Mr. Austen proposes an excellent method. He heats a flask half full of the liquid containing a precipitate, and then dexterously conveys it, mouth downwards, without spilling any of its contents, into an evaporating dish. After the liquid has cooled, and thus caused water from the evaporating dish to rise into the flask, he says: "By gently shaking the flask the liquid slaps against the top (bottom) and sides, thus dislodging completely all adhering particles. A slight revolving motion is then given, and the heavy solid particles go quickly down through the neck of the flask into the dish. After all the substance is removed the glass is gradually tilted, and the liquid allowed to run out. This operation also requires a little skill. If a bent glass tube be introduced into the flask a quick exit of the contained liquid is effected."

4. *Cleansing Instrument.*—Mr. Austen pictures a little wire contrivance, consisting of three wires bent with claw ends and twisted together to within about a couple of inches of their ends, so as to form a long handle on which runs a wire ring, which, by sliding up and down the three claws, compresses them to any desired extent. It is useful for grasping wet paper, small towels, etc., etc., for the purpose of introducing into bottles, etc., for cleansing them. It is a very handy contrivance; but Mr. Austen makes a great mistake in supposing it to be new. It has been in use as far as our memory carries us back, and has mostly been employed as an aid in extracting corks which has been pushed into the inside of bottles.

Morrison's Wide-Angle Lenses—the best of their kind.

PRINTING WITH FATTY INKS.

MR. DESPAQUIS addresses to the Paris *Moniteur* the following communication with regard to this process.

To obtain fine photographic prints for fatty inks upon a gelatin plate, and to print therefrom an unlimited number (more than from a steel plate, for steel wears out, whilst gelatin does not on account of its flexibility in the wet state), it is necessary to use my process, that is to say, after having, as does Mr. Albert, of Munich, previously exposed on the reverse side the plate coated with albumen, then expose it on the *right side* under the negative, to make a last exposure by the back until the meeting of the half-tones of the exposure which has taken place under the negative cliché.

Gelatin does not adhere to polished metals. It adheres but slightly to grained metals. If we wish to operate on metal it is necessary to make use of grained plates to be enabled to make a small number of prints.

HOVEY'S ALBUMEN PAPERS.

To operate on copper, that is to say, without exposure from the back, it is necessary to make a thin coating, so that the high lights of the negative cliché should allow the light to pass through the whole thickness of the film, and cause thereby their adherence to the copper. In this case the grain of the copper is completely reproduced on the image, giving it a disagreeable granulated appearance; and notwithstanding this thinness of the film, but a very small number of defective prints can be made. If the coating of gelatin on the copper is thick, the grain will show less, but the plate will give only a few smeared prints, owing to the swelling of the gelatin when wet.

What I say is so true, that even in using my process on glass, that is to say, in exposing for the third time from the back, until the meeting of the half-tones, it is necessary to use polished plates, and not those of ground-glass, as however fine these last may be, they show on the print and take away its softness.

But to use my process with success, and obtain prints as beautiful as those made with silver salts, it is indispensable that the gelatin coating on the plate should be of uniform thickness; I may say mathematically so. It is easy to understand that if the coating is not of uniform thickness, the thin parts will be completely traversed by the exposure made by the back, whilst on the contrary, in the thick parts, the exposure will not have penetrated as far as the half-tones, the image will have disappeared in the first, and will not yet be veiled in the second. It is impossible to arrive at positive exactness by the manipulation adopted up to this time—method which consists in placing the plates level in the dryer, then taking them on the hand to coat them with gelatin, and afterwards replacing them on the adjusting screws. In operating in this manner, nine times in ten the coating of gelatin is not equal, and it is impossible to use my process in a proper manner.

When the coating is very equal, exposure may be maintained until the disappearance of three-fourths of the image, and this disappearance occurs regularly and progressively on all the parts of the image.

If through forgetfulness the exposure should be too long and the image should have almost entirely disappeared, it would be necessary to copiously wet it before inking, allowing it to remain in the water several hours and even several days, and without the necessity of drying after it comes from the water. But, if notwithstanding this soaking, the ink should take all over the plate, that is to say, if the print became pasty, it should not be thrown aside. The ink should be removed by spirits of turpentine, and the surface rubbed with ammonia, slightly diluted with water, or with a solution of chloride of lime.

This is the mode of operating to obtain a coating of gelatin of uniform thickness. After the albumenized plates have been exposed for a first time by the back, as indicated by Albert (of Munich), they are placed very evenly on the adjusting screws in the dryer, and to make sure the level is passed over the plate in every direction. Beforehand has been prepared a solution of bichromatized gelatin, thus composed:

Water, . . .	**1000 grammes.**	**(34 fl. oz.).**
Strong Gelatin of Dieuze, that which is most difficult to dissolve, .	**25 to 30 grammes.**	**(385 to 462 grs.).**
Bichromate of Ammonia, .	**6 to 7 grammes.**	**(93 to 108 grs.).**

The bichromate is dissolved in one-tenth of the water and added, when the gelatin is well dissolved, to the remainder of the water which has been used to dissolve the gelatin. Filter through paper or through several thicknesses of linen or woollen.

The dryer is now heated in order to slightly heat the plates, so that the cold plate does not too quickly coagulate the gelatin before it has become level. The solution of gelatin is then poured on the plates without disturbing them, and as this gelatin solution is very liquid, the excess will run off all around the plate and obtain its level by its own weight, since the plates have not been disturbed from their horizontal position. Care must also be taken, for greater security, to pass the finger all around the plates, so as to wet the edges and allow the excess of gelatin to run off regularly at all points. It is even desirable to have the

S. P. C. CHEMICALS ARE ALWAYS RELIABLE.

edges of the plates leveled so that they can form no obstacle.

With these precautions it is possible to obtain a coating of gelatin mathematically perfect which can without fear be exposed, first, by the front, under the negative to obtain the image, then, by the back, until the image has disappeared one-half and even three-quarters.

A plate thus made can furnish an unlimited number of prints; as many as can be obtained from a stereotype plate. This plate cannot be injured except by accident—scratching with the nail or by the sand in the wetting sponge, or by the mask, when a mask is used, in order to keep the paper clean. But in making use, for the printing, of the cylindrical press with endless paper and wetting rollers made out of a special stone, these accidents will no longer be feared, and soon, in sending you a description of this press, which I have invented, I will furnish you with a method of obtaining margins which are perfectly intact, without making use of any mask. I believe that your readers will take much interest in this description when they learn that with a small hand-press, put in motion by a crank, they can deliver at night, if need be, twenty thousand portraits printed from a negative made the same morning.

I would add that with a plate thus made, that is to say, exposed by the back until the regular disappearance of one-half or three-fourths of the image, the gelatin being no longer able to swell, nor the lines to enlarge by wetting, prints are obtained as fine, if not more beautiful, than those made with silver salts, as it is possible to give them the tint that is desired; and if the printing is done on gelatinized white paper with a little very fine white mixed with the gelatin, which enables them to be varnished with a brilliant varnish similar to picture varnish, the prints thus treated imitate very well the so-called enamelled silver prints.

DESPAQUIS.

The Photographer's Evaporator and Alcohol Stove complete, $1.25.

TOPICS OF THE TIMES.

THE photographic branch of the Paris Exposition in 1878 promises to be a success. We are told that no less than fifty applications have been received from Germany, and nearly three hundred from French photographers.

SEVERAL sad cases of poisoning by cyanide have occurred recently. Why will photographers be so careless in the use of this deadly ingredient? There are bottles manufactured with rough labels upon them, and others with a skull cast in the mould, which can be obtained for the use of such articles; and every photographer should keep his poisonous solutions in such bottles, so that either in night or day he could not possibly make a mistake. We almost wish we were able to supply each photographer with a stock of such bottles free, on condition that they would use them.

SOLAR CAMERA work in England is almost impossible, the average hours of sunshine per day being only about three hours.

PEOPLE who have an idea, and such an idea is very prevalent, that photography costs nothing, will be strengthened in their absurd idea when they learn that a short time since the United States Treasury advertised for bids for printing bank checks at so much per thousand; and there was so much rivalry between the American Phototype Company and the "Graphic Company," that each of them determined to get it if possible. The Phototype Company bid for the job at $\frac{1}{1000}$ of a mill per thousand, and the "Graphic," not to be beaten, offered to do it for nothing. The contract was awarded to the latter as the lowest bidder. There is now a lawsuit grown out of the enterprise.

A CORRESPONDENT says: "I have been using the Entrekin burnisher for some time. I do not know that I ever had a print scratched. I mount my prints while damp, and rub them down with writing-paper. Keep your tongue off your prints, and you will never be troubled with streaks. I use starch for paste."

Hovey's Albumen Papers. **The best Portrait Lens—"Peerless."**

THE BEST PORTRAIT LENS IS THE "PEERLESS."

a piece of plain paper or drawing paper sufficiently large to admit of a body or part of a body being sketched to it. A landscape or panelled background can also be easily introduced by a good draughtsman, and the effect is really very charming. Of course it can be done on any tint of paper. Bits of ivory are also let in with photographs of the head and hands on a similar principle; only the ivory is so thick that a hole of exactly the same size and shape has to be cut and the ivory let in.

There are two distinct methods of painting on a photograph in oil, answering somewhat to tinting and highly finishing in water color. One is by doing as much as possible with glazes of color largely diluted with medium; and the other is like the ordinary painting in oil, the effect being very similar. I will describe the former method first, as it is the easiest; but it will only answer on good photographs.

If an autotype be used you may commence on it at once, and the colors will bear out on it most brilliantly, and not sink in the least—no small advantage. The mess and trouble of sizing an albumenized silver print is often very annoying, and proves a great waste of time; but it is absolutely necessary. A hot, thin solution of Nelson's gelatin, with a little powdered alum, is good.

JOSEPH WAKE.

(To be continued.)

TOPICS OF THE TIMES.

AND what next? Not content with blue, purple, and rose-colored glass, some brave personage has suggested that if the glass in the skylight be tinted a pale bright yellow, that it will be just the thing. We have as good a right, we suppose, as any one else to make a suggestion, and therefore we suggest that those who so continuously hanker after color would do better to paint their studio glass entirely black, then shut up shop and clear out of the business. We guarantee if this is done that their models will never complain of the light hurting their eyes, although the tears may come to them before the exposures are sufficiently long. The effect could be increased by scratching star-shaped apertures through the black. We are prepared to defend this method on scientific grounds.

ANOTHER set of experimentalists are at work abroad for the purpose of making ærial photographs. They entirely ignore the æronaut and his balloon, and have devised an instrument which produces pictures in a camera floated in the air, which are developed on falling to the ground. The raising of the camera into the air, the opening and shutting of the dark-slide, and safe conveyance of the apparatus to the ground again, are the problems to be solved; and these we hear have been successfully combatted by two skilful experimenters already. If such an apparatus were sent up from the Russian quarters, we can understand how very warm a welcome it would be given by the "Quartier Turko." We presume that the apparatus mentioned must be constructed on the boomerang principle. Just as the photographer knows it will do, when his apparatus comes back to him looking for development, so do we.

THE American Institute Fair closed with the award to the successful ones of the medals and diplomas, after a most successful exhibition, which began September 12th. The following were among the awards: "Medal of Taste," to N. Sarony, for charcoal drawings; "Medal of Superiority," to N. Sarony, F. Gutekunst, G. W. Pach, G. G. Rockwood, and Schwind & Kruger, for photographs; "Medal of Excellence," to G. G. Rockwood for chromotypes, and to Theo. Gubelman for photographs; "Diploma," to A. Naegeli for photographs, and to L. J. Marcy for his sciopticon. The only award made for apparatus was to the Scovill Manufacturing Company, to whom a "Medal of Snperiority" was given. We congratulate the favored parties, both on their enterprise and success.

FROM Mr. C. F. Richardson, Wakefield, Mass., we have received the last issue of his publication, *Photographic Notes.* Very interesting and tasteful. It speaks well of his *ready sensitized paper.*

FROM Mr. Ollivier, New Brunswick, N. J., we have received the first issue of a neat little sheet called *The Skylight.* Full of interest and good points.

The American Carbon Manual;

OR,

The Production of Photographic Prints in Permanent Colors.

BY

EDWARD L. WILSON,

Editor of "The Philadelphia Photographer."

THIS work treats of Swan's, Crossman's, and all the most approved processes of Carbon Printing and Manipulation; and, while it sets forth the various successful methods, it also shows the errors and hindrances which arise in the experience of Carbon workers. In short, it is the most complete and comprehensive treatise on the Carbon Photograph which has ever been issued in Europe or America.

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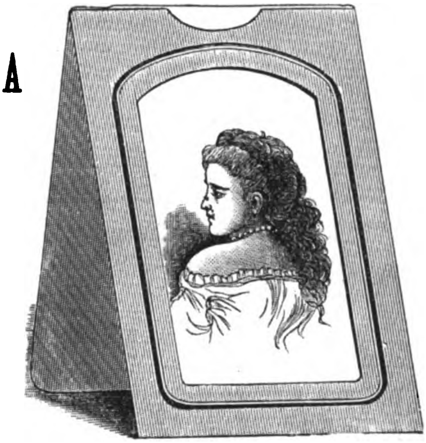

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No. 1 *a*.	1-4 size, double achromatic lenses, 2⅛ inches diameter, focal length 4 inches, rack and pinion, and fitted with five Waterhouse diaphragms in morocco case, ...	$25 00
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No. 3 *a*.	4-4 size, double achromatic lenses, 3 inches diameter, focal length 9 inches, rack and pinion, and fitted with eight Waterhouse diaphragms in morocco case, ...	60 00
No. 4 *a*.	Ex. 4-4 size, double achromatic lenses, 4 inches diameter, focal length 14½ inches, rack and pinion, and fitted with eight Waterhouse diaphragms in morocco case, . . .	150 00

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No.	Size View.	Focal Length.	Price.
1	3 x 3	2½ inch.	$60 00 per pair.
2	3½ x 5	3 "	60 00 "
3	4 x 5½	4 "	60 00 "
4	4¼ x 6¼	4½ "	60 00 "
5	5 x 8	5 "	60 00 "
6	6½ x 8½	6 "	60 00 "
7	8 x 10	8 "	40 00 each.
8	11 x 14	10 "	60 00 "
9	14 x 17	13½ "	80 00 "
10	17 x 20	17½ "	100 00 "
11	24 x 30	22 "	160 00 "

REMARKS.

Nos. 1 to 6 are all made in matched pairs for stereoscopic work. The shorter-focussed Lenses are especially adapted for street and other views in confined situations. For general purposes, a pair of No. 5 Lenses will be found most useful.

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	Size of Group.	Size of Landscape.	Back Focus.	Equivalent Focus.	Each.
C,	4 x 5,	4½ x 7¼,	7½ in.,	8¼ in.,	$47 00
CC,	5 x 6,	6½ x 8½,	10¼ "	11 "	60 00
D,	6½ x 8½,	8 x 10,	12¼ "	13 "	75 00
E,	8 x 10,	10 x 12,	15 "	16 "	92 00
F,	10 x 12,	11 x 14,	18 "	19½ "	128 00
G,	11 x 14,	15 x 18,	23 "	24¾ "	170 00

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These Lenses work with full aperture for Groups, and will copy absolutely sharp to the corners of the plate, marked under the head of "Size of Landscape."

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